

**State of California  
AIR RESOURCES BOARD**

**RESOLUTIONS**

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS to Resources
88-1	Recognition of Efforts and Dissolution of the Architectural Coatings Task Force (ACTF)	SSD	01/07/88	01/07/88	01/13/88
88-2	Lifetimes & Fates of Toxic Air Contaminants in California Atmosphere UCR \$294,867	RD	01/07/88	01/07/88	N/A
88-3	Sampling, Analysis, & Validation of Indoor Concentrations of Polycyclic Aromatic Hydrocarbons IEE \$149,520	RD	01/07/88	01/07/88	N/A
88-4	Emissions of Volatile & Potentially Toxic Organic Cmpds from Wastewater Trmt Plnts & Coll Sys. UCD \$169,999	RD	01/07/88	01/07/88	N/A
88-5	Incidence of Respiratory Symptoms & Chronic Disease in a Nonsmoking Population LLU \$257,573	RD	01/07/88	01/07/88	N/A
88-6	Crop Loss from Air Pollution Assessment Program UCR \$ 97,979	RD	01/07/88	NOT/88 ADOPTED	-----
88-7	Snow, Snowmelt, Rain, Runoff & Chemistry in a Sierra Nevada Watershed. UCSB \$374,151	RD	01/07/88	01/07/88	N/A
88-8	Test Methods for Determining Emissions of Particulate Matter from Non-Vehicular Sources	SSD	01/07/88	01/07/88	01/13/88
88-9	New/Used Aftermarket Catalytic Converters Offered for Sale and Use in California.	MSD	01/07/88	01/07/88	08/24/88
88-10	Long Range Research Plan: 1988 Update	RD	02/19/88	02/19/88	N/A
88-11	Crop Loss from Air Pollutants Assessment Program. UCR \$97,979	RD	02/19/88	02/19/88	N/A
88-12	Effects of Ozone on Photosynthesis, Vegetative Grwth, Dvlpmnt of Woody Prnls in SJ Vllly UCR \$165,758	RD	02/19/88	02/19/88	N/A
88-13	SCAQ Study: PAN Measurements at Class B Stations-Proposal for PAN Calibration and Methyl Nitrate Measurement. \$82,381	RD	02/19/88	02/19/88	N/A
88-14	Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro. UCD \$45,784	RD	02/19/88	02/19/88	N/A
88-15	***** V O I D *****			--VOID--	
88-16	Dr. Thomas Mack Resolution	EO	02/19/88	02/19/88	N/A

State of California  
AIR RESOURCES BOARD

RESOLUTIONS

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS to Resources
88-17	Hexavalent Chromium Control Plan	SSD	02/18/88	02/18/88	N/A
88-18	Hexavalent Chromium Emissions From Chrome Plating and Chromic Acid Anodizing Facilities	SSD	02/18/88	02/18/88 *	
88-19	"Growth, Physiological and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone" UCR \$157,446	RD	03/10/88	02/18/88	N/A
88-20	A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants" CAF \$36,996	RD	03/10/88	03/10/88	N/A
88-21	"Cost of Reducing Aromatics and Sulfur Levels in Motor Vehicle Fuels" A.D. Little, Inc. \$35,531	RD	03/10/88	03/10/88	N/A
88-22	"Southern CA Air Quality Study: Tunable Diode Laser Absorption Spectrometer \$49,180 Measurements-Hydrogen Peroxide/Formaldehyde	RD	03/10/88	03/10/88	N/A
88-23	"Quantitative Estimate of the Air Quality Effects of Methanol Fuel Use Carnegie-Mellon Univ. \$162,397	RD	03/10/88	03/10/88	N/A
88-24	Reduction of Cold-Start Emissions From Methanol Vehicles	RD	04/07/88	--VOID--	
88-25	Evaporative Emissions Running Loss Determination \$50,880	RD	04/07/88	04/07/88	N/A
88-26	Formaldehyde Emission Control Technology for Methanol-Fueled Vehicles \$299,097	RD	04/07/88	04/07/88	N/A
88-27	Hydroxynitro-PAH and Other PAH \$273,609 Devrivatives in California's Atmosphere and Contribution to Ambient Mutagenicity	RD	04/07/88	04/07/88	N/A
88-28	Reserved by RD -- Not Used	RD		--VOID--	
88-29	Evaluation of Membrane Materials as Innovative Volatile Organic Control Devices \$37,496	RD	04/07/88	04/07/88	N/A
88-30	Hydrocarbon Emissions from Vegetation Found in California's Central Valley \$149,983	RD	04/07/88	04/07/88	N/A
88-31	Study of Economic Incentives to Control Photochemnically Reactive Organic Compound Emissions From Consumer Products \$106,318	RD	04/07/88	04/07/88	N/A
88-32	Activity Patterns of California Children : A Micro-behavioral Approach \$99,995	RD	04/07/88	04/07/88	N/A

State of California  
AIR RESOURCES BOARD

RESOLUTIONS

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS to Resources
88-33	Ambient Hydrogen Sulfide and Perception of Its Odor by Residents of Lake County \$57,925	RD	04/07/88	04/07/88	N/A
88-34	Monitoring at Sequoia National Park \$6,000	RD	05/13/88	05/13/88	N/A
88-35	Assessment of the Ecological Effects of Acid Deposition in California \$21,000	RD	05/13/88	05/13/88	N/A
88-36	Characterizing Nitric Acid Formation in an Exposure Chamber \$18,803	RD	05/13/88	05/13/88	N/A
88-37	Agricultural burning Regulations for South Central Coast Air Basin	TSD	05/12/88	05/12/88	*
88-38	Ability of Diesel Pile-Driving Hammers to Meet Opacity Standards	SSD	05/12/88	05/12/88	N/A
88-39	Dr. James N. Pitts Retirement Resolution	EO	05/13/88	05/13/88	N/A
88-40	Landfill Gas Testing Program	SSD	06/09/88	06/09/88	N/A
88-41	Determination of Agricultural/Forestry Emission Offset Credits (AB2158, Condit, 1987)	SSD	06/09/88	06/09/88	08/24/88
88-42	Fee Schedule and List of Substances Pursuant to the Air Toxics "Hot Spots" Information & Assessment Act of 1987	SSD	07/14/88	07/14/88	*
88-43	Sumps Used in Oil Production Operations Control of Organic Compound Emissions	SSD	08/11/88	08/11/88	N/A
88-44	Amendments to Regulations Regarding Cert. of Fed-Cert Light-Duty Motor Vehicles for Sale in California	MSD	07/15/88	07/15/88	*
88-45	Report on Use of Hold-Open Latches to Reduce Benzene Exposure	SSD	07/15/88	07/15/88	N/A
88-46	Addition of Members to the Modeling Advisory Committee	TSD	07/15/88	** VOID ***	VOID **
88-47	Data Analysis for the Southern California Air Quality Study -- Phase I ERT \$124,170	RD	08/11/88	08/11/88	N/A
88-48	Development of Species Profiles for Selected Organic Emission Sources CalPoly \$140,161	RD	08/11/88	08/11/88	N/A

State of California  
AIR RESOURCES BOARD

RESOLUTIONS

No.	Item	Staff	Hearing Scheduled	Date Adopted	+ EIS Resources
88-49	P-TEAM: Chemical Characterization of Indoor Air Particulates #67,536	RD	08/11/88	08/11/88	N/A
88-50	In-Use Recall Regulations	MSD	11/18/88		*
88-51	Adjudicatory Hearing Procedures	EOLGL	11/18/88		*
88-52	***** V O I D *****	*****	*****	* V O I D	*****
88-53	Carbon Tetrachloride Control Plan	SSD	11/17/88		*
88-54	Carbonaceous Species Methods Comparison Study, Interlaboratory Round Robin: Interpretation of Results STI \$19,940	RD	11/17/88		N/A
88-55	Effects of Prolonged, Sequential Exposure to Acid Fog & Ozone on Pulmonary Function in Exercising, Normal Subject UCSF \$191,549	RD	11/17/88		N/A
88-56	Growth, Physiological, and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone UCR \$159,548	RD	11/17/88		N/A
88-57	Test Methods for Nickel, ETO, PAH, and Formaldehyde	MLD	11/18/88		*
88-58	Amend to Recall Bond (response to the K & E Petition)	MSD	11/18/88		*
88-59	Diesel Fuels Comp Reg	SSD	11/17/88		* 9/18/88
88-60	Joint Presentation of Caltrans and ARB on the Relationship Between Transportation and Air Quality Programs	EO	12/08/88		
88-61	Draft Report to Legislature on Emission Credit System and New Source Review	EO	12/08/88		
88-62					
88-63					
88-64					

State of California  
AIR RESOURCES BOARD

Resolution 88-1

January 7, 1988

Agenda Item: 88-1-1

WHEREAS, on October 21, 1981, by Resolution 81-65, the Air Resources Board formed the Architectural Coatings Task Force (ACTF), composed of a chairperson with expertise in architectural coatings, representatives of air pollution control districts, the paint industry, painting contractors, and the Board "to evaluate the performance of water-based nonflat paints and to make initial recommendations to the Board and to the districts...on modifications to district rules...";

WHEREAS, Professor John A. Gordon has served with distinction as chairman of the ACTF and has used his knowledge of coating technology to lead the ACTF productively;

WHEREAS, Board members Dr. Alvin Gordon, John Doyle, Dr. Andrew Wortman, and Roberta A. Hughan have respectively served on the ACTF and assisted the ACTF in fulfilling its assigned purpose;

WHEREAS, the representatives of the paint industry and painting contractors (Frank Peters, Dunn-Edwards Company; Robert E. Minucciani, Glidden Coatings & Resins; Earl Fenstermaker, Conklin-Fenstermaker, Inc.; Lloyd Haanstra, Guardsman Chemicals; Frank Belt, L & B Painting; Bobbi Stover, Major Paints; Edward Kevin, O'Brien Corporation; Robert Waitman, Cal Western Paints; and Carl Burg, Paint & Decorating Contractors, Inc.) serving on the ACTF have generously donated time, money, equipment, and knowledge to further the work of the ACTF;

WHEREAS, the representatives of the air pollution control and air quality management districts (Bob Matson and Judith Cutino, Bay Area Air Quality Management District; Michael R. Lake and Dick Smith, San Diego County Air Pollution Control District; Moustafa Elsherif, Larry Bowen, and John Thrash, South Coast Air Quality Management District; and Cliff Calderwood, Kern County Air Pollution Control District) serving on the ACTF have worked diligently to resolve issues and to develop reasonable regulatory controls regarding nonflat paints;

WHEREAS, the ACTF has generated reports summarizing the results of its investigations which resulted in an ACTF recommendation to

the Technical Review Group that an interim VOC limit for nonflat coatings be continued temporarily; and

WHEREAS, the ACTF has facilitated cooperation between industry and regulatory agencies to resolve various issues relating to architectural coatings rules:

NOW, THEREFORE, BE IT RESOLVED that the Air Resources Board expresses its great appreciation to the members of the ACTF for their service and contributions to the cause of clean air in California.

BE IT FURTHER RESOLVED that since the work of the ACTF is complete, the Board hereby dissolves the ACTF and requests the Executive Officer to forward a copy of this Resolution to the ACTF members.

BE IT FURTHER RESOLVED that the Board endorses and supports the formation by the Technical Review Group of subcommittees for addressing current issues regarding the control of emissions from architectural coatings.

BE IT FURTHER RESOLVED that in the formation of the subcommittees noted above, the Board urges the Technical Review Group to make use of the expertise of members of the ACTF and of other qualified people from government and the coatings industry.


I hereby certify that the above is a true and correct copy of Resolution 88-1, as adopted by the Air Resources Board.



Pat Hutchens  
Assistant Board Secretary

State of California

MEMORANDUM

To : Gordon Van Vleck  
Secretary  
Resources Agency  
  
Cary Allison  
Board Secretary  
From : Air Resources Board

Date : January 13, 1988  
Subject : Filing of Notice  
of Decisions of  
the Air Resources  
Board

Pursuant to Title 17, Section 60007 (b), and in compliance with Air Resources Board certification under Section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decisions and response to environmental comments raised during the comment period.

ATTACHMENTS

86-68  
86-70  
86-71  
86-94  
86-98  
86-99  
86-115  
87-9  
87-61  
87-62  
87-66  
88-1  
88-8

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-2  
January 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1554-135A, entitled "Lifetimes and Fates of Toxic Air Contaminants in California's Atmosphere," has been submitted by the University of California, Riverside; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

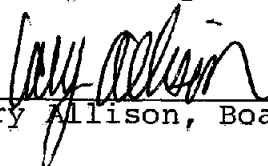
Proposal Number 1554-135A, entitled "Lifetimes and Fates of Toxic Air Contaminants in California's Atmosphere," submitted by the University of California, Riverside, for a total amount not to exceed \$294,867.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1554-135A, entitled "Lifetimes and Fates of Toxic Air Contaminants in California's Atmosphere," submitted by the University of California, Riverside, for a total amount not to exceed \$294,867.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$294,867.

I hereby certify that the above is a true and correct copy of Resolution 88-2, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary



ITEM NO.: 88-1-1(b) 1  
DATE: January 7, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1554-135A, entitled  
"Lifetimes and Fates of Toxic Air Contaminants  
in California's Atmosphere"

**RECOMMENDATION:** Adopt Resolution 88-2 approving Proposal No.  
1554-135A for an amount not to exceed  
\$294,867.

**SUMMARY:** The objective of this project is to determine the atmospheric removal processes, atmospheric chemistry and ambient concentrations of 12 potential toxic air contaminants identified for review pursuant to AB 1807 (Tanner Bill). The project is a continuation of a planned multi-year study by the University of California, Riverside, to determine the reaction rate constants for specified toxic air contaminants in the presence of important oxidizing species. These data will help define the degradation pathways and products of atmospheric reactions of the compounds and also establish whether they can be formed in the atmosphere from other substances. The results of this study will be used by Air Resources Board staff and others to assist in control strategy development for risk management.

In the first phase of this study, the University of California, Riverside, investigated the atmospheric chemistry and determined the kinetics/and or the products of the gas-phase reactions of 16 volatile and

## B U D G E T   S U M M A R Y

University of California, Riverside

"Lifetimes and Fates of Toxic Air Contaminants in  
California's Atmosphere"

### BUDGET ITEMS:

Salaries	\$181,587
Benefits	46,538
Supplies	24,900
Travel	5,036
Other Costs (a)(b)(c)	<u>10,000</u>

TOTAL, Direct Cost	\$268,061
TOTAL, Indirect Cost	<u>26,806</u>

TOTAL PROJECT COST	<u>\$294,867</u>
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- (a) Computer Library Search
  - (b) Computer Shop Charges
  - (c) Reproduction

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-3  
January 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1560-136, entitled "Sampling, Analysis, and Validation of Indoor Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs)," has been submitted by Indoor Environmental Engineering; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1560-136, entitled "Sampling, Analysis, and Validation of Indoor Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs)," submitted by Indoor Environmental Engineering, for a total amount not to exceed \$149,520.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1560-136, entitled "Sampling, Analysis, and Validation of Indoor Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs)," submitted by Indoor Environmental Engineering, for a total amount not to exceed \$149,520.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$149,520.

I hereby certify that the above is a true and correct copy of Resolution 88-3, as adopted by the Air Resources Board,

  
Cary Allison, Board Secretary

ITEM NO.: 88-1-1(b) 2  
DATE: January 7, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No.1560-136 entitled  
"Sampling, Analysis and Validation of Indoor  
Concentrations of Polycyclic Aromatic  
Hydrocarbons (PAHs)

**RECOMMENDATION:** Adopt Resolution 88-3 approving Proposal No.  
1560-136 for an amount not to exceed \$149,520.

**SUMMARY:** The objective of this project is to develop  
appropriate sampling, analytical and validation  
methods for measuring personal and/or indoor  
airborne exposures of the California population  
to polycyclic aromatic hydrocarbons (PAHs) in  
both the particulate and vapor phase.

PAHs have been identified by the Air Resources  
Board as toxic air contaminants. Reliable  
monitoring data are needed to better assess and  
to help manage the risk to public health posed  
by these toxic air contaminants. Currently,  
only indirect methods are available for  
determining indoor exposures to PAHs; this  
project will develop and validate suitable  
methods which can be used to obtain indoor  
exposure data.

This is a planned study in the Board's Long-  
Range Research Plan.

## B U D G E T   S U M M A R Y

### Indoor Environmental Engineering

"Sampling, Analysis and Validation of Indoor  
Concentrations of Polycyclic Aromatic Hydrocarbons (PAHs)

#### BUDGET ITEMS:

Salaries	\$ 27,760
Subcontract	81,000
Laboratory Supplies*	9,500
Copying Costs	300
Travel	<u>3,200</u>

TOTAL, Direct Cost	\$121,760
TOTAL, Indirect Cost	<u>27,760</u>

**TOTAL PROJECT COST**                      **\$149,520**  
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\*Sampling Pumps  
Chromatographic Column  
Portable Gas Chromatograph

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-4  
January 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1550-135, entitled "Emissions of Volatile and Potentially Toxic Organic Compounds from Wastewater Treatment Plants and Collection Systems," has been submitted by the University of California, Davis;

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

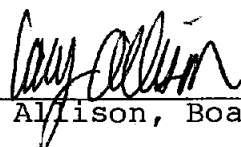
Proposal Number 1550-135, entitled "Emissions of Volatile and Potentially Toxic Organic Compounds from Wastewater Treatment Plants and Collection Systems," submitted by the University of California, Davis, for a total amount not to exceed \$169,999.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1550-135, entitled "Emissions of Volatile and Potentially Toxic Organic Compounds from Wastewater Treatment Plants and Collection Systems," submitted by the University of California, Davis, for a total amount not to exceed \$169,999.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$169,999.

I hereby certify that the above is a true and correct copy of Resolution 88-4, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

ITEM NO.: 88-1-1(b) 3  
DATE: January 7, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1550-135 entitled  
"Emissions of Volatile and Potentially Toxic  
Organic Compounds from Wastewater Treatment  
Plants and Collection Systems."

**RECOMMENDATION:** Adopt Resolution 88-4 approving Proposal No.  
1550-135 for an amount not to exceed \$169,999.

**SUMMARY:** The objective of this project is to quantify the  
emissions of 16 volatile and potentially toxic  
organic compounds from Publicly Owned Treatment  
Plants and Collection Systems in California.

The 16 compounds are listed on the Air Resources  
Board's list of toxic and potentially toxic  
compounds to be reviewed in accordance with the  
California Health and Safety Code Section  
39660.5 (Assembly Bill 3052, Tanner).

In the first phase of this project, the  
University of California, Davis (UCD), completed  
a survey of available information, identified  
toxic or potentially toxic compounds emitted,  
and determined where critical information gaps  
exist in knowledge of emissions. Under the  
subject proposal, UCD would carry out a field  
measurement program and would develop a model to  
predict emissions of toxic compounds from  
wastewater treatment systems.

## BUDGET SUMMARY

University of California, Davis

"Emissions of Volatile and Potentially  
Toxic Organic Compounds from Wastewater  
Treatment Plants and Collection Systems"

### BUDGET ITEMS:

Salaries	\$ 80,631	
Benefits	16,421	
Supplies	6,390	
Chemical Analysis Gas/ Liquid Samples	22,880	
*Equipment	17,300	
Computer Usage/ Report Preparation	1,165	
Travel	<u>11,330</u>	
<b>TOTAL, Direct Cost</b>		<b>\$156,117</b>
<b>TOTAL, Indirect Cost</b>		<b><u>13,882</u></b>
	<b>TOTAL PROJECT COST</b>	<b>\$169,999</b>
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### \*Equipment Summary:

Desolver/Purge-and Trap	\$ 8,500
Desolver	2,200
Liquid Level Meter	4,100
Freon Analyzer	<u>2,500</u>
Total	\$17,300



**State of California**

**AIR RESOURCES BOARD**

Resolution 88-5  
January 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1479-130A, entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (Year 2 of the AHSMOG Follow-up Study)," has been submitted by Loma Linda University; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

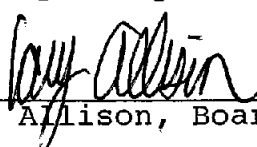
Proposal Number 1479-130A, entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (Year 2 of the AHSMOG Follow-up Study)," submitted by Loma Linda University for a total amount not to exceed \$257,573.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1479-130A, entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (Year 2 of the AHSMOG Follow-up Study)," submitted by Loma Linda University for a total amount not to exceed \$257,573.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$257,573.

I hereby certify that the above is a true and correct copy of Resolution 88-5, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

ITEM NO.: 88-1-1(b) 4  
DATE: January 7, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1479-130A entitled "Incidence of Respiratory Symptoms and Chronic Diseases in a Nonsmoking Population as a Function of Long Term Cumulative Exposure to Ambient Air Pollutants (Year 2 of the AHSMOG Follow-up Study)"

**RECOMMENDATION:** Adopt Resolution 88-5 approving Proposal No. 1479-130A for an amount not to exceed \$257,573.

**SUMMARY:** Knowledge about the health effects of long-term exposures to existing ambient levels of pollution is needed to determine if standards protect adequately against effects of these exposures. Very few long-term epidemiological studies are performed because of the large effort and expense involved. This proposal is to fund the second of two years to complete a restudy of the large non-smoking population investigated in the first AHSMOG study. That study, which analyzed the respiratory symptom and disease effects of ten years of exposures to several ambient pollutants, showed that subjects frequently exposed to high levels of ozone and suspended particulates had significantly increased risks of chronic obstructive pulmonary disease.

The purpose of the restudy is to assess the effects of ten additional years of exposures to ambient pollution, together with information about all occupational exposures and exposures to indoor pollutants and others' tobacco smoke. Comprehensive information about lifestyle factors that affect responses to air pollution will also be taken into account. The restudy is analyzing the rates of cancer and heart disease and overall mortality, as well as the rates of respiratory symptoms and diseases analyzed in the first study. The data collection and verification of the project's first year are being completed on schedule.

The investigator proposes to perform a large number of thorough statistical analyses of this very large body of data. The analyses will be performed by three epidemiologists, each specializing in one category of health effects, with the assistance of consultants on indoor air quality, fine particulates, and statistical methods. The principal investigator of this study is Dr. Daniel Abbey of the Loma Linda University.

## BUDGET SUMMARY

Loma Linda University

"Incidence of Respiratory Symptoms and Chronic Diseases  
in a Nonsmoking Population as a Function of Long Term Cumulative  
Exposure to Ambient Air Pollutants  
(Year 2 of the AHSMOG Follow-up Study)"

### BUDGET ITEMS:

Salaries	\$115,187	
Benefits	29,948	
Supplies	2,950	
Equipment*	1,620	
Travel	3,319	
Consultants	15,351	
Other Costs**	<u>26,400</u>	
<b>TOTAL, Direct Cost</b>		<b>\$194,775</b>
<b>TOTAL, Indirect Cost</b>		<b><u>62,798</u></b>
<b>TOTAL PROJECT COST</b>		<b>\$257,573</b>
		<b>=====</b>

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\* Equipment: Two leased IBM Personal Computers

\*\* Other Costs: Includes \$24,000 computer charges

# Resolution

## 88-6

### Missing Resolution

**State of California  
AIR RESOURCES BOARD**

Resolution 88-7

January 7, 1988

**WHEREAS**, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 39900 through 39915; and

**WHEREAS**, a request for budget augmentation for Contract No. A6-147-32, entitled "Snow, Snowmelt, Rain, Runoff and Chemistry in a Sierra Nevada Watershed," has been submitted by the University of California, Santa Barbara; and

**WHEREAS**, the Research Division staff has reviewed and recommended this augmentation for approval; and

**WHEREAS**, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

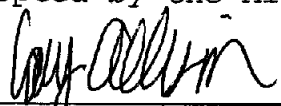
Augmentation to Contract No. A6-147-32, entitled "Snow, Snowmelt, Rain, Runoff and Chemistry in a Sierra Nevada Watershed," submitted by the University of California, Santa Barbara by \$9,149 for a total amount not to exceed \$374,151.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

Augmentation to Contract No. A6-147-32, entitled "Snow, Snowmelt, Rain, Runoff and Chemistry in a Sierra Nevada Watershed," submitted by the University of California, Santa Barbara by \$9,149 for a total amount not to exceed \$374,151.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein by \$9,149 for a total amount not to exceed \$374,151.

I hereby certify that the above is a true and correct copy of Resolution 88-7, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

ITEM NO.: 88-1-1(b) 6  
DATE: January 7, 1988

**State of California  
AIR RESOURCES BOARD**

**ITEM:**

Augmentation for Contract No. A6-147-32 entitled "Snow, Snowmelt, Rain, Runoff and Chemistry in a Sierra Nevada Watershed"

**RECOMMENDATION:**

Adopt Resolution 88-7 approving a budget augmentation of Contract No. A6-147-32 by \$9,149 for a total contract amount not to exceed \$374,151.

**SUMMARY:**

This contract augmentation will provide for air quality and acid deposition field support at Sequoia National Park during winter 1987-88. Specifically, this augmentation provides for a part-time technician to service ARB samplers for wet and dry deposition at remote locations in the Park.

The results of this monitoring effort will aid the Air Resources Board in defining the magnitude of acidic pollutants deposited to Sierran forests and high-altitude lakes. In addition, this study will provide some of the first information on the acidity of cloud water intercepted by coniferous forests on the western slope of the Sierra Nevada.

The principal investigators for this effort are Drs. Jeff Dozier and John Melack of the University of California, Santa Barbara.

State of California  
AIR RESOURCES BOARD

Resolution 88-8

January 7, 1988

Agenda Item: 88-1-2

WHEREAS, Section 39601 of the Health and Safety Code authorizes the Air Resources Board ("Board") to adopt standards, rules and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, Section 39607(d) of the Health and Safety Code requires the Board to adopt test procedures to measure compliance with its nonvehicular (stationary) source emission standards and those of the air pollution control and air quality management districts ("districts");

WHEREAS, the Board has previously adopted its Method 5, "Determination of Particulate Matter Emissions from Stationary Sources," which is incorporated by reference in Section 94105, Title 17, California Administrative Code;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as proposed if feasible alternatives or mitigation measures are available which would substantially reduce such adverse impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the California Administrative Procedure Act, Title 2, Division 3, Part 1, Chapter 3.5 (commencing with Section 11340) of the Government Code;

WHEREAS, the Board finds that:

Method 5 presently contains language which can be construed as requiring inflexible glass connectors if the test includes a determination of condensed particulate in the impingers;

The amendments proposed by staff and set forth in Attachments A and B would assure that non-contaminating leak-free flexible materials may be used in place of glass where the test is used to determine condensed particulate in the impingers;

Using inflexible glass connectors is not practical for Method 5 applications to certain stack configurations, and non-contaminating leak-free materials such as Teflon have been demonstrated to provide acceptable results in Method 5 determinations of particulate impinger catch;

Adoption of the amendments set forth in Attachments A and B will have no significant adverse environmental impacts.



NOW, THEREFORE, BE IT RESOLVED that the Board hereby amends Title 17, California Administrative Code, Section 94105 as set forth in Attachment A, and amends Method 5, "Determination of Particulate Matter Emissions from Stationary Sources," as set forth in Attachment B.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-8, as adopted by  
the Air Resources Board.

  
\_\_\_\_\_  
Pat Hutchens  
Assistant Board Secretary

State of California

MEMORANDUM

To : Gordon Van Vleck  
Secretary  
Resources Agency

Date : January 13, 1988

Subject : Filing of Notice  
of Decisions of  
the Air Resources  
Board

  
Cary Allison  
Board Secretary

From : Air Resources Board

Pursuant to Title 17, Section 60007 (b), and in compliance with Air Resources Board certification under Section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decisions and response to environmental comments raised during the comment period.

ATTACHMENTS

86-68  
86-70  
86-71  
86-94  
86-98  
86-99  
86-115  
87-9  
87-61  
87-62  
87-66  
88-1  
88-8

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendment of a Regulation  
Regarding a Test Method for Determining Emissions of  
Particulate Matter from Nonvehicular Sources

Agenda Item No.: 88-1-2


Public Hearing Date: January 7, 1988

Response Date: January 7, 1988

Issuing Authority: Air Resources Board

Comment: No comments were received identifying any significant  
environmental issues pertaining to this item. The  
staff report identified no adverse environmental  
effects.

Response: N/A

Certified:   
Board Secretary

Date: 3/21/88

State of California  
AIR RESOURCES BOARD

Resolution 88-9  
January 7, 1988

Agenda Item No.: 88-1-4

WHEREAS, Sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the "Board" or "ARB") to adopt standards, rules and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, Section 43000 of the Health and Safety Code provides that vehicle emission standards applied to new motor vehicles, and to used motor vehicles equipped with motor vehicle pollution control devices, are standards with which all motor vehicles shall comply;

WHEREAS, Section 43011 of the Health and Safety Code authorizes the Board to establish criteria for the evaluation of the effectiveness of motor vehicle pollution control devices;

WHEREAS, Sections 27156 and 38391 of the California Vehicle Code prohibit the installation, sale, offer for sale or advertisement of any device, apparatus, or mechanism intended for use with, or as a part of any required motor vehicle pollution control device or system which alters or modifies the original design or performance of any such motor vehicle pollution control device or system (hereinafter a "modified part") unless the Board finds either that the modified part does not reduce the effectiveness of any required motor vehicle pollution control device or does not result in emissions from a modified vehicle which exceed the applicable emissions standards for the vehicle;

WHEREAS, on November 4, 1977, the Board adopted the "Criteria for Evaluation of Add-On Parts and Modified Parts" (last amended May 19, 1981) which contain general evaluation criteria and procedures applicable to all types of modified parts for issuing exemptions from the anti-tampering prohibitions of Vehicle Code Sections 27156 and 38391;

WHEREAS, on August 5, 1987, the U.S. Environmental Protection Agency ("EPA") proposed the adoption of the "Enforcement Policy for the Sale and Use of Aftermarket Catalytic Converters"

(hereinafter "EPA Enforcement Policy") which contains evaluation criteria and procedures for enforcing the federal anti-tampering provisions of Section 203(A)(3) of the Clean Air Act (51 FR 28114 (August 5, 1987)) and established the proposed enforcement policy as its interim enforcement policy effective immediately (51 FR 28133 (August 5, 1987));

WHEREAS, EPA's interim enforcement policy applies to new non-original equipment and recycled original equipment catalytic converters;

WHEREAS, the staff has proposed adoption of regulations which would incorporate specific evaluation procedures based on the EPA Enforcement Policy for new aftermarket non-original equipment catalytic converters;

WHEREAS, the staff has also proposed adoption of regulations to clarify that used original equipment catalytic converters may not be sold or used in California without an exemption from the anti-tampering prohibitions of Vehicle Code Sections 27156 and 38391 and has proposed to incorporate the specific evaluation procedures contained in the EPA Enforcement Policy for used original equipment oxidation catalytic converters;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted if feasible alternatives or mitigation measures to the proposed action are available to reduce and avoid such impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, the Board finds that:

The existing "Criteria for Evaluation of Add-On Parts and Modified Parts" do not provide an adequate or cost-effective means of evaluating aftermarket catalytic converters under Vehicle Code Sections 27156 and 38391 because the criteria do not include specific procedures for assessing durability of aftermarket catalytic converters;

Approximately 140,000 new non-original equipment or used catalytic converters are sold annually to enable vehicles to

meet Smog Check Program requirements or because a failing catalytic converter adversely affects vehicle performance;

Because the catalytic converter is a critical component of the emissions control system on converter-equipped vehicles and because the converter's control efficiencies deteriorate with age, improved evaluation procedures are necessary to allow the use of aftermarket catalytic converters without adversely affecting air quality in this state;

The evaluation procedures for new aftermarket non-original equipment catalytic converters with the specified conversion efficiencies as specified in Attachment A will ensure the availability of low-cost new non-original equipment catalytic converters which will not reduce the effectiveness of any required motor vehicle pollution control device when installed on vehicles which are at least 5 years old or with at least 50,000 miles, or which have a missing or tampered catalytic converter;

Used catalytic converters are not functionally identical to a vehicle's original equipment catalytic converter because prior use reduces the converter's performance and durability;

The proposed evaluation procedures for used original equipment oxidation catalytic converters will ensure the availability of low-cost used oxidation catalytic converters which will not reduce the effectiveness of any required oxidation catalytic converter when installed in vehicles which are at least 5 years old or have at least 50,000 miles, or which have a missing or tampered catalytic converter;

The EPA Enforcement Policy for used original equipment three-way catalytic converters does not provide for a showing of adequate NOx conversion efficiency; therefore, it cannot be used to make a finding that such a converter will not reduce the effectiveness of any required motor vehicle pollution control device or will not cause the vehicle on which such a catalytic converter is installed to exceed the applicable emissions standards;

WHEREAS, the Board further finds that:

The additional costs for new aftermarket non-original equipment catalytic converters sold in California pursuant

to the proposed evaluation procedures will increase the cost of these converters to consumers, however, these converters would not otherwise be available to California consumers and are lower in cost than new original equipment converters;

The adoption of specific evaluation procedures for recycled oxidation converters will allow used converter recyclers and salvagers to maintain catalytic converter sales in this state, although sales of recycled three-way and salvaged catalytic converters will be eliminated or significantly decreased as a result of enforcement of Vehicle Code Sections 27156 and 38391;

Adoption of the proposed regulations will result in an emissions benefit of 6.8 tons per day of oxides of nitrogen compared to the Board's current enforcement policy and will not result in any significant adverse environmental impacts; and

The reporting requirements of the proposed regulations which apply to small businesses are necessary for the health, safety, and welfare of the people of the state.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves Sections 2222(h) and 2222(i), Title 13, California Administrative Code, and the incorporated evaluation procedures, as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt Sections 2222(h) and 2222(i), Title 13, California Administrative Code, and the incorporated evaluation procedures as set forth in Attachment A, after making them available to the public for a period of 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

BE IT FURTHER RESOLVED that the Board hereby determines that the amendments approved herein will not cause the California emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards, will not cause the California requirements to be inconsistent with Section 202(a) of the Clean Air Act and raise no new issues affecting previous waiver determinations of the Administrator of the

Environmental Protection Agency pursuant to Section 209(b) of the Clean Air Act.

BE IT FURTHER RESOLVED that if necessary the Executive Officer shall forward the amended regulation to the Environmental Protection Agency with a request either for confirmation that the amendments are within the scope of the existing waiver or for issuance of a new waiver, pursuant to Section 209(b)(1) of the Clean Air Act.

I hereby certify that the above is a true and correct copy of Resolution 88-9, as adopted by the Air Resources Board.



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Cary Allison, Board Secretary



State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Regulations Regarding New and Used  
Aftermarket Catalytic Converters Offered for Sale and Use in  
California.

Agenda Item No.: 88-1-4

Public Hearing Date: December 3, 1987  
January 7, 1988

Response Date: N/A

Issuing Authority: Air Resources Board


Comment: No comments were received identifying any significant  
environmental issues pertaining to this item. The staff report  
identified no adverse environmental effects.

Response: N/A

Certified:

  
Board Secretary

Date:

  
8/5/88

ATTACHMENT A

Adopt new subsections 2222(h) and 2222(i), Title 13, California Code of Regulations\*, to read as follows:

(h)(1) The Executive Officer shall exempt new aftermarket non-original equipment catalytic converters from the prohibitions of California Vehicle Code Sections 27156 and 38391 based on an evaluation conducted in accordance with the "California Evaluation Procedures for New Aftermarket Non-Original Equipment Catalytic Converters" as adopted by the state board on \_\_\_\_\_.

(2) No person shall install, sell, offer for sale or advertise, any new non-original equipment aftermarket catalytic converter in California after 180 days from the date of filing of these regulations with the Secretary of State unless they have been exempted pursuant to the procedures as provided in this subsection.

(3) For the purposes of this regulation, a new aftermarket non-original equipment catalytic converter is a catalytic converter which is constructed of all new materials and is not a replacement part as defined in Title 13, CAC, Section 1900, or which includes any new material or construction which is not equivalent to the materials or construction of the original equipment converter.

(i)(1) Except as provided in Subsection (i)(2) below, no person shall install, sell, offer for sale or advertise, any used catalytic converter in California unless the catalytic converter has been exempted pursuant to the "Criteria for Evaluation of Add-On Parts and Modified Parts", adopted by the state board on November 4, 1977, as amended May 19, 1981.

(2) The Executive Officer shall exempt used original equipment oxidation catalytic converters which comply with the U.S. Environmental Protection Agency interim enforcement policy for used converters (published at 51 Federal Register (FR) 28114 (August 5, 1986) and 51 FR 28132 (August 5, 1986)) from the prohibitions of California Vehicle Code Sections 27156 and 38391 for the vehicle applications indicated by the federal label and installation instructions.

\* Modifications to the regulation as originally made available for public comment October 16, 1987 are shown in double underline and strikeout.

(3) No person shall install, sell, offer for sale or advertise, any recycled or salvaged used catalytic converter in California more than 30 days after the date of filing of these regulations with the Secretary of State unless they have been exempted from the prohibitions of California Vehicle Code Sections 27156 and 38391 pursuant to the procedures provided in this subsection.

(4) For the purposes of this regulation, a "used catalytic converter" is a catalytic converter which is not a new aftermarket non-original equipment catalytic converter as defined in Subsection (XX)(b)(3), or a replacement part as defined in Section 1900; and "oxidation catalytic converter" is a catalytic converter designed for the control of only hydrocarbon and carbon monoxide emissions.

**NOTE:** Authority cited: Sections 39600, 39601, 43000, and 43011 Health and Safety Code. Reference: Sections 39002, 39003, 39500, 43000, 43011 and 43644 Health and Safety Code and Sections 38391, 38395 and 27156 Vehicle Code.

State of California  
AIR RESOURCES BOARD

California Evaluation Procedures for New Aftermarket  
Non-Original Equipment Catalytic Converters

Adopted: \_\_\_\_\_

NOTE: This is a new document proposed for adoption by the Air Resources Board. On January 7, 1988, the Board approved modifications to the regulations as originally made available for public comment October 16, 1987. The modifications to the originally proposed text are shown below in underline and strikeout.

State of California  
AIR RESOURCES BOARD

California Evaluation Procedures for New Aftermarket  
Non-Original Equipment Catalytic Converters

I. Applicability

California Vehicle Code Sections 27156 and 38391 prohibit the sale or offer for sale, advertisement, or installation of any device which alters or modifies the original design or performance of any required motor vehicle pollution control device or system unless the device has been exempted by the California Air Resources Board (ARB) in accordance with Vehicle Code Section 27156 or 38395. Exemptions for new aftermarket non-original equipment catalytic converters as replacements for Original Equipment Manufacturers' (OEM) oxidation, three-way or three-way plus-oxidation (dual bed) catalytic converters shall be granted pursuant to these procedures and criteria. Catalytic converters which are considered to be replacement parts, i.e., new OEM converters and other converters meeting the criteria set forth in Section 1900(h)(13), Title 13, California Administrative Code (CAC) do not require exemptions under Vehicle Code Sections 27156 and 38395.

Aftermarket non-original equipment ("non-OEM") catalytic converters which are exempted pursuant to these procedures shall not be installed on any vehicle less than 5 years old and with less than 50,000 miles unless the converter is missing or the Smog Check program has determined the existing converter is tampered and needs replacement. An exempt aftermarket non-OEM catalytic converter shall not be used on vehicles where the converter is covered under warranty or the vehicle is being recalled. An exempt aftermarket non-OEM converter can replace a catalytic converter of the same type. An exempt aftermarket non-OEM oxidation catalytic converter can only replace an oxidation catalytic converter; however, an oxidation catalytic converter can be replaced by an exempt aftermarket non-OEM three-way catalytic converter, or an aftermarket non-OEM three-way catalytic converter which complies with the U.S. Environmental Protection Agency Interim enforcement policy for new aftermarket catalytic converters (published at 51 Federal Register (FR) 28114 (August 5, 1986), and 51 FR 28132 (August 5, 1986)).

## II. Test Procedures

A vehicle application catalog shall be developed by the manufacturer to identify the specific vehicle applications by model year and engine displacement for each converter model. No change shall be made to the application catalog without prior approval pursuant to these procedures. Aftermarket non-OEM catalytic converters shall be identified as either oxidation, single-bed three-way, or dual-bed (with air injection). Each type (model) catalytic converter shall be evaluated independently. Two "worst case" vehicles from the application catalog of each type (model) new aftermarket non-OEM catalytic converter will be selected and tested for emissions and durability.

The "worst case" vehicles in each application category shall be determined based upon engine displacement and vehicle test weight which produce the greatest stress on emission related components. Unless otherwise indicated by information supplied by the converter manufacturer, the largest engine displacement within the highest test weight class shall be chosen. Vehicles selected for testing shall be approved as "worst case" vehicles by the ARB prior to emission testing and mileage accumulation.

### Mileage Accumulation

Durability mileage accumulation shall be conducted on each test vehicle for 25,000 miles using the AMA durability driving schedule (Reference Appendix IV, Title 40, Part 86, Code of Federal Regulations (June 28, 1977)) or an equivalent driving schedule. If intermediate mileage emissions testing is performed, the test results shall be submitted to the ARB. Non-AMA driving cycles and alternate durability demonstrations, such as bench tests, may be used if approved by the ARB as providing an equivalent demonstration of converter durability as a 25,000-mile AMA driving cycle. Different vehicles may be used for mileage accumulation and testing if they are equal with respect to "worst case" emission-related parameters (i.e., "slave" vehicle(s) may be used for emissions testing). Mileage accumulation and slave vehicles must be emissions stabilized prior to any mileage accumulation or emission testing. If a vehicle has accumulated 4000 miles, it is assumed to be stabilized. Engine reconditioning is permitted prior to mileage accumulation and emission testing. Each test vehicle shall be equipped with the test catalyst. The test converters shall be installed according to the manufacturer instructions submitted to the ARB. Commercially available unleaded fuels and oils of the grade and quality specified by the vehicle manufacturer(s) in the owner's manual(s) shall be used.

During mileage accumulation and emission testing, the vehicles shall be set to the vehicle manufacturer specifications. Scheduled maintenance of the engine, emission control system and fuel system of each test vehicle shall be conducted according to the maintenance allowed in the ARB's new vehicle certification procedures for the applicable model year. Records of all vehicle and engine maintenance shall be maintained and submitted with the test results. Unscheduled maintenance must have prior approval by the Air Resources Board. Unscheduled maintenance shall be approved if the ARB determines the maintenance will not affect the vehicle's emissions. No maintenance of the catalytic converter during the test period shall be permitted.

### Emissions Testing

Emissions testing performed pursuant to these test procedures shall be conducted by an independent test laboratory. For purposes of this requirement an independent test laboratory is one that is not owned or operated by the manufacturer of the catalytic converter for which an exemption is sought. The baseline emissions of the test vehicles with the OEM converter shall be determined prior to mileage accumulation. If the exhaust emission values are determined as atypical, the test vehicle will not be accepted. The emission values will be considered atypical if they are greater than 15% of the emission values determined by the ARB in-use vehicle data bank based upon the test vehicle model year and mileage.

After the mileage accumulation (25,000 miles), two CVS-75 emission tests shall be performed on each test vehicle with the test converter installed. If the pair of test results are within 10% for HC and CO and 15% for NOx, they shall be averaged to obtain with-converter (w/c) emissions. If the data do not meet the above consistency requirements, a third test may be run. The results of the third test may be averaged with either of the first two tests if the pair meet the required consistency standards. If the third test does not result in a consistent pair, the converter design shall not be accepted. If the w/c emission values are determined atypical, as above, the test data will not be accepted.

After the 25,000 mile point tests, the catalyst shall be removed and replaced with an exhaust pipe or a dummy catalyst which simulates the vehicle's exhaust backpressure characteristics under normal road load conditions during a CVS-75 test cycle. Two additional CVS-75 emission tests shall be performed on each vehicle with the catalyst removed. The consistency requirements established for w/c emissions shall be used to obtain the without-catalyst (wo/c) emission values.

### Submissions

The converter manufacturer shall submit the application catalog, the mileage accumulation procedures and test procedures, as well as data from all emissions testing for each converter model.

### III. Performance Standards

The catalyst efficiency shall be determined using the averaged 25,000 mile test data in the following formula:

CVS-75 efficiency =

$$\frac{(\text{wo/c CVS-75 emissions} - \text{w/c CVS-75 emissions})}{(\text{wo/c CVS-75 emissions})} \times 100\%$$

In order to be an acceptable converter model, the catalyst efficiency determined above must be greater than or equal to the values shown in the following table for each converter tested.

<u>Catalyst Type</u>	<u>Required Efficiency</u>		
	<u>HC</u>	<u>CO</u>	<u>NOx</u>
Oxidation	70%	70%	-
Single-bed three-way	70%	70%	60%
Dual-bed	70%	70%	<del>60%</del> <u>50%</u>

### IV. Confirmatory Testing

The ARB may perform confirmatory tests to verify any submitted test data. Manufacturers must retain their test catalytic converters and vehicles for thirty (30) calendar days after the complete test information is received by the ARB. If required, confirmatory tests shall be requested by the ARB within this 30 day period. If the results of the ARB confirmatory tests show that the catalytic converter does not meet any conversion efficiency standard, the catalytic converter design will not be accepted.



V. Warranty and Safety Statement

The converter manufacturer shall warrant that its catalyst is free from defects in materials and workmanship which cause such catalysts to fail to conform with the emission reduction requirements specified in paragraph III for a period of 25,000 miles from the date of installation. To ensure the external durability of aftermarket converters, manufacturers shall warrant their external shell, including end pipes, to last for five years or 50,000 miles from the date of installation, whichever occurs first. The warranty shall cover the full replacement cost including parts and labor. The converter manufacturer shall provide with each converter a statement that the converter has been designed and manufactured to meet the warranty requirements. In addition, manufacturers shall provide a written statement that their catalytic converters will not in their operation, function, or malfunction result in any unsafe condition endangering the motor vehicle, its occupants or persons or property in close proximity to the vehicle. A sample of the manufacturers' warranty and safety statements shall be submitted to the ARB for review in accordance with the requirements of this paragraph.

VI. Label Requirement

The manufacturer shall label each catalytic converter with a permanent, non-destructible label or stamp identifying the manufacturer, the model, and the month and year of manufacture. The label or stamp shall be easily visible after installation of the converter according to the manufacturer's instructions. The label information shall be in the following format:

CA/XX/YYYY/ZZZZ

CA -	designates a California approved converter.
XX -	is the manufacturer code issued by the ARB.
YYYY -	is a numerical designation of the vehicle application(s) (supplied by the manufacturer).
ZZZZ -	is the month and year of the manufacture (i.e., - "0186" represents January, 1986).

Each converter manufacturer shall submit a sample of their label or stamp to the ARB for review.

## VII. Required Information

In addition to the information and data required in Paragraphs II, V and VI, the following information shall be supplied to the ARB for each model converter for which certification is being requested.

- 1) Catalyst supplier and address.
- 2) General type: oxidation, single-bed three-way, dual-bed.
- 3) Number of each type of catalyst used per can.
- 4) Substrate - give configuration construction technique (e.g., extruded, laid-up, formed, Dravo disk, etc.), composition, supplier and address, composition of active constituents in substrate. For monolithic substrates, give number of cells per square inch of frontal area with the design tolerances, and nominal cell wall thickness. For pelleted substrates, give pellet shape and dimensions, pellet bulk density, specify (if applicable) the use of more than one type of pellet (e.g., Rh or Pt/Pd), the geometrical distribution of pellets, and the mean impregnation depth of active materials with the production tolerances.
- 5) Washcoat - give composition of active constituents, and total active material loading in washcoat.
- 6) Active material - give composition of active constituents, loading of each active material including design tolerances, total active material loading including design tolerances.
- 7) Container - dimensions, volume, materials used, technique of containment and restraint, method of constructing container, canner (if different from catalyst supplier), and insulation and shielding (converter and/or vehicle).
- 8) Physical description - dimensions (e.g., length, width, height, etc.), weight, volume including design tolerances, active surface area (BET), and total active surface area including design tolerances.

## VIII. Approval

If, after a review of the submitted information and confirmatory test data, if required, the ARB determines that a specific model complies with all the requirements in these procedures for new aftermarket non-OEM catalytic converters, the ARB will issue the applicant an Executive Order exempting that model from the prohibitions of Vehicle Code Sections 27156 and 38391. The converter model may then be marketed in California for those vehicles listed in the manufacturer's application catalog approved by the ARB. The applicant shall not use the Executive Order as an endorsement or approval by the Air Resources Board.

## IX. Installation Requirements

Exemptions shall be applicable only for installations which comply with the following requirements. The converter shall:

- 1) Be installed only in situations listed in paragraph I;
- 2) Be installed in the same location as the original equipment catalytic converter;
- 3) Be the proper catalytic converter for the vehicle as determined and specified by the manufacturer's application catalog submitted to the ARB;
- 4) Be installed such that any existing air injection components on the vehicle are properly connected to the catalytic converter and functioning;
- 5) Be installed with all other required catalytic converters if more than one converter was installed originally by the vehicle manufacturer or if more than one converter was specified by the converter manufacturer.
- 6) Be accompanied by the warranty and safety statements.

## IX. Production Audit Testing

At a minimum, one out of every 5,000 production converters shall be emission tested following an accumulation of 500 miles of appropriate vehicle operation over the AMA driving schedule or its equivalent. The emission data must be evaluated as shown in Paragraph III and must be in compliance with the conversion efficiency standards shown in Paragraph III. If the first selected production converter fails to meet the efficiency standards, the manufacturer may submit a test plan to further evaluate the failed converter model based upon a statistical analysis or the manufacturer may submit a plan of action to correct the problem. The test plan or plan of

action shall be submitted to the ARB within 30 days after failure of a converter model, and shall be approved by the Executive Officer prior to implementation. All quality audit data, as well as production quantity data for each converter model, must be submitted to the ARB for review on a semi-annual basis. Reports should be sent to the Chief, Mobile Source Division, Air Resources Board, 9528 Telstar Avenue, El Monte, CA 91731, no later than August 15 and February 15 for each production year.

As an alternative to the mileage accumulation and emissions testing, manufacturers may submit their quality control procedures and the quality control procedures of their major suppliers. If the manufacturer can demonstrate that these quality control procedures will produce converters which are consistent in quality with the converters used for evaluation of that converter model, the mileage accumulation and emissions testing, as specified above, will not be required. Manufacturers shall have their quality control procedures approved by the Executive Officer prior to production. The Executive Officer shall approve or disapprove a manufacturer's quality control procedures within 30 days of the submission of the procedures and the document(s) containing the demonstration described above. Any changes to the quality control procedures shall be reported to the ARB and approved by the Executive Officer prior to their implementation.

The ARB reserves the right to inspect facilities and records and may also randomly select and test production units for enforcement purposes. Failure to meet the stated production audit requirements may result in violations of Vehicle Code Section 27156 or 38391 and subject the manufacturer to recalls pursuant to this paragraph and Section 2225, Title 13, CAC, and other penalties as provided by law, including those provided in Business and Professions Code Sections 17200 and 17500.

State of California

MEMORANDUM

To : Gordon Van Vleck  
Secretary  
Resources Agency

Date : August 24, 1988

Subject : Filing of Notice of  
Decisions of the Air  
Resources Board

  
Cary Allison  
Board Secretary

From : Air Resources Board

Pursuant to Title 17, Section 60007 (b), and in compliance with Air Resources Board certification under Section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decisions and response to environmental comments raised during the comment period.

ATTACHMENTS

87-30  
87-62  
87-82  
87-83  
87-90  
87-91  
87-92  
87-95  
88-9  
88-41

State of California  
AIR RESOURCES BOARD

Resolution 88-10  
February 19, 1988

WHEREAS, the Legislature has declared in Health and Safety Code Section 39700 that an effective research program is an integral part of the board-based statewide effort to combat air pollution in California;

WHEREAS, Health and Safety Code Section 39703 directs the Air Resources Board to administer and coordinate all air pollution research funded, in whole or in part, with state funds and to establish objectives for air pollution research in California;

WHEREAS, Health and Safety Code Section 39705 requires the Air Resources Board to appoint a Research Screening Committee to give advice and recommendations with respect to all air pollution research projects funded by the state; and

WHEREAS, the Research Screening Committee has reviewed and approved a Long-Range Research Plan, dated February 1988, for air pollution research in California.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Sections 39600 and 39703, hereby concurs in the recommendation of the Research Screening Committee and approves the Long-Range Research Plan for air pollution research in California.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-10, as adopted by  
the Air Resources Board.



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Cary Allison  
Board Secretary

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-11  
February 19, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1553-135R, entitled "Crop Loss from Air Pollutants Assessment Program," has been submitted by the University of California, Riverside;

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

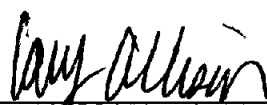
Proposal Number 1553-135R, entitled "Crop Loss from Air Pollutants Assessment Program," submitted by the University of California, Riverside, for a total amount not to exceed \$97,979.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1553-135R, entitled "Crop Loss from Air Pollutants Assessment Program," submitted by the University of California, Riverside, for a total amount not to exceed \$97,979.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$97,979.

I hereby certify that the above is a true and correct copy of Resolution 88-11, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison  
Board Secretary

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-12

February 19, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1565-136R, entitled "The Effects of Ozone on Photosynthesis, Vegetative Growth, and Development of Woody Perennials in The San Joaquin Valley of California" submitted by the University of California, Davis;

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

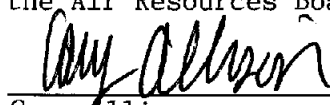
Proposal Number 1565-136R, entitled "The Effects of Ozone on Photosynthesis, Vegetative Growth, and Development of Woody Perennials in The San Joaquin Valley of California" submitted by the University of California, Davis, for a total amount not to exceed \$165,758.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1565-136R, entitled "The Effects of Ozone on Photosynthesis, Vegetative Growth, and Development of Woody Perennials in The San Joaquin Valley of California" has been submitted by the University of California, Davis, for a total amount not to exceed \$165,758.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$165,758.

I hereby certify that the above is a true and correct copy of Resolution 88-12, as adopted by the Air Resources Board.



Cary Allison  
Board Secretary



## B U D G E T   S U M M A R Y

University of California, Davis

"The Effects of Ozone on Photosynthesis, Vegetative Growth,  
and Development of Woody Perennials in  
The San Joaquin Valley of California"

### BUDGET ITEMS:

Salaries	\$55,566	
Benefits	17,321	
Equipment	30,902	
Supplies	40,250	
Travel	6,050	
Other Costs	<u>600</u>	
<b>TOTAL, Direct Cost</b>		<b>\$150,689</b>
<b>TOTAL, Indirect Cost</b>		<b><u>15,069</u></b>
	<b>TOTAL PROJECT COST</b>	<b>\$165,758</b>
		<b>=====</b>

### Equipment:

Portable Photosynthesis Unit -	\$8,600
OREC Ozone Generator, Model 03V10-AR -	\$5,550
OREC Ozone Generator, Model SP19-AR -	\$13,552
Mass Flow Controllers -	\$3,200

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-13  
February 19, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a request for budget augmentation for Contract No. A6-099-32, entitled "Southern California Air Quality Study: PAN Measurements at Class B Stations -- Proposal for PAN Calibration and Methyl Nitrate Measurements," has been submitted by Daniel Grosjean and Associates, Inc.; and

**WHEREAS**, the Research Division staff has reviewed and recommended this augmentation for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Augmentation to Contract No. A6-099-32, entitled "Southern California Air Quality Study: PAN Measurements at Class B Stations -- Proposal for PAN Calibration and Methyl Nitrate Measurements," submitted by Daniel Grosjean and Associates, Inc. by \$21,230 for a total amount not to exceed \$82,381.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Augmentation to Contract No. A6-099-32, entitled "Southern California Air Quality Study: PAN Measurements at Class B Stations -- Proposal for PAN Calibration and Methyl Nitrate Measurements," submitted by Daniel Grosjean and Associates, Inc. by \$21,230 for a total amount not to exceed \$82,381.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, by \$21,230 for a total amount not to exceed \$82,381.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-13, as adopted by  
the Air Resources Board.



Cary Allison  
Board Secretary

## B U D G E T   S U M M A R Y

Daniel Grosjean and Associates, Inc.

"Southern California Air Quality Study:  
PAN Measurements at Class B Stations -- Proposal for PAN  
Calibration and Methyl Nitrate Measurements"

### BUDGET ITEMS:

Salaries	\$8430
Benefits	1172
Supplies	3200
Travel	<u>1720</u>

TOTAL, Direct Cost	\$14,522
TOTAL, Indirect Cost	<u>6,708</u>

TOTAL PROJECT COST	\$21,230
=====	

**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-14**

**February 19, 1988**

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a request for budget augmentation for Contract No. A5-153-33, entitled "Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro," has been submitted by the University of California, Davis; and

**WHEREAS**, the Research Division staff has reviewed and recommended this augmentation for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Augmentation to Contract No. A5-153-33, entitled "Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro," submitted by the University of California, Davis by \$2,431 for a total amount not to exceed \$45,784.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Augmentation to Contract No. A5-153-33, entitled "Effects of Ozone on Cellular Synthesis and Viral Replication In Vitro," submitted by the University of California, Davis by \$2,431 for a total amount not to exceed \$45,784.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, by \$2,431 for a total amount not to exceed \$45,784.

I hereby certify that the above is a true and correct copy of Resolution 88-14, as adopted by the Air Resources Board.

  
Cary Allison  
Board Secretary

Resolution

88-15

No Resolution

# Resolution

## 88-16

### Missing Resolution

State of California  
AIR RESOURCES BOARD

Resolution 88-17

February 18, 1988

Agenda Item No.: 88-2-1

WHEREAS, on January 23, 1986, pursuant to Section 39662 of the Health and Safety Code, the Air Resources Board (Board) identified hexavalent chromium as a toxic air contaminant for which there is not sufficient available scientific evidence to support the identification of a threshold exposure level below which no significant adverse health effects are anticipated (see Title 17, California Code of Regulations, Section 93000);

WHEREAS, following identification of hexavalent chromium as a toxic air contaminant, the Board is required by Health and Safety Code Section 39665 to consider the need for and appropriate degree of regulation of hexavalent chromium;

WHEREAS, the staff prepared for the Board's review the "Proposed Hexavalent Chromium Control Plan" (the Plan) which describes an overall course of action for control but does not propose for adoption any specific hexavalent chromium control measures;

WHEREAS, the plan identifies potential hexavalent chromium control measures that reflect the use of technologically feasible controls;

WHEREAS, the plan addresses, to the extent information is available: the present and anticipated emissions of and exposure to hexavalent chromium; the physical and chemical characteristics of hexavalent chromium relevant to its stability, persistence and dispersion potential in the ambient air; the source categories and their relative contribution to hexavalent chromium emissions and exposure; the availability, technological feasibility, cost, and expected effect of potential hexavalent chromium airborne toxic control measures; the availability, suitability, and relative efficacy of substitute compounds of a less hazardous nature; and the potential adverse health, safety, or environmental impacts of implementing a proposed airborne toxic control measure;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available.

WHEREAS, the Plan was made available to the public for review and comment;

WHEREAS, at a public meeting held February 18, 1988, the Board reviewed the plan and considered the written comments and public testimony received;

WHEREAS, the Board finds that the Plan is an appropriate course of action for the staff to follow in developing hexavalent chromium control measures for the Board's consideration in order to reduce public health risk from ambient hexavalent chromium exposure; and

WHEREAS, the Board has determined, pursuant to the requirements of the California Environmental Quality Act and Board regulations, that this action will have no significant adverse impact on the environment.

NOW, THEREFORE, BE IT RESOLVED, the Board directs the staff to place the highest priority on developing hexavalent chromium control measures for chrome plating and anodizing operations and chromate treated cooling towers; to present for Board consideration these proposed airborne toxic control measures as soon as practicable; to continue to evaluate the feasibility of controlling emissions of hexavalent chromium from the other source categories; and to bring before the Board any additional hexavalent chromium control measures that warrant consideration.

I hereby certify that the above is  
a true and correct copy of Resolution  
88-17, as adopted by the Air Resources  
Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary



State of California  
AIR RESOURCES BOARD

Resolution 88-18

February 18, 1988

Agenda Item No.: 88-2-2

WHEREAS, on January 23, 1986, pursuant to Section 39662 of the Health and Safety Code, the Air Resources Board (Board) identified hexavalent chromium as a toxic air contaminant for which there is not sufficient available scientific evidence to support identification of a threshold exposure level below which no significant adverse health effects are anticipated (see Title 17, California Code of Regulations, Section 93000);

WHEREAS, following identification of hexavalent chromium as a toxic air contaminant, the Executive Officer, with the participation of local air pollution control districts, is required to prepare a report on the need for and appropriate degree of control of hexavalent chromium emissions;

WHEREAS, the staff has worked closely with the districts through the Technical Review Group and with the affected industry sources to develop as expeditiously as practicable an airborne toxic control measure for emissions of hexavalent chromium from chrome plating and chromic acid anodizing operations;

WHEREAS, the staff has developed a proposed airborne toxic control measure (ATCM) which would require that uncontrolled emissions of hexavalent chromium be reduced by at least 95% for all chrome plating and chromic acid anodizing operations and that would require greater emission reductions for the larger emitters;

WHEREAS, the staff has prepared the "Proposed Airborne Toxic Control Measure for Emissions of Hexavalent Chromium from Chrome Plating and Chromic Acid Anodizing Operations" (staff report) and its Technical Support Document which include: estimates of hexavalent chromium emissions, exposure, cancer risk and cancer incidence from chrome plating and chromic acid anodizing operations; a discussion of the availability, technological feasibility and costs of an ATCM to reduce emissions of

hexavalent chromium from chrome plating and chromic acid anodizing operations; a discussion of the anticipated effect of the ATCM on hexavalent chromium exposure and risk; a discussion of the alternatives to the ATCM; and identification of any potential adverse health, safety or environmental impacts of the ATCM;

WHEREAS, the staff report for the proposed ATCM and its Technical Support Document in conjunction with the Hexavalent Chromium Control Plan and its Technical Support Document constitute the report on the need and appropriate degree of regulation for hexavalent chromium required by Health and Safety Code Section 39665;

WHEREAS, the proposed ATCM would reduce hexavalent chromium emissions and the potential lifetime cancer incidence (220-2800 cancer cases) from chrome plating and chromic acid anodizing operations by requiring the use of the most effective controls that are technologically feasible to reduce hexavalent chromium emissions for the protection of the public health as required by Health and Safety Code Section 39666 (c);

WHEREAS, the Technical Review Group has reviewed and approved the proposed control measure;

WHEREAS, the proposed ATCM was made available to the public for review and comment and was discussed at public consultation meetings on June 5, 1986, June 27, 1986, February 5, 1987, April 10, 1987 and December 2, 1987;

WHEREAS, in accordance with Health and Safety Code Section 39665(c), the staff report and relevant comments received during public consultation with the districts, affected industry sources, and the public were made available for public review and comment 45 days prior to the public hearing to consider the proposed ATCM;

WHEREAS, in order to address particular localized conditions, districts may consider the adoption of measures which will reduce the public health risk further than the ATCM through operational limitations and other nontechnological means.

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available;

WHEREAS, a public hearing and other administrative proceedings were held in accordance with provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, in consideration of the staff report and the written comments and public testimony it has received, the Board finds:

The added lifetime cancer incidence from exposure to hexavalent chromium emissions from chrome plating and chromic acid anodizing operations contributes to the statewide and local incidence of cancer;

The proposed airborne toxic control measure for hexavalent chromium complies with the requirements of state law for control of sources of toxic air contaminants identified by the Board;

The proposed airborne toxic control measure would reduce hexavalent chromium emissions from chrome plating and chromic acid anodizing operations by mandating the levels of control based on the level of emissions, difficulty of achieving control and risk to public health;

A level of control more stringent than best available control technology is necessary for the highest-emitting facilities in order to reduce the risk to public health; and

The reporting requirements of the proposed regulation which apply to small businesses are necessary for the health, safety, and welfare of the people of the state;

WHEREAS, the Board has determined, pursuant to the requirements of the California Environmental Quality Act and Board regulations, that this regulatory action will have no significant adverse impact on the environment.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby adopts Section 93102, Subchapter 7.5, Chapter 1, Part III, Titles 17 and 26, California Code of Regulations as set forth in Attachment A.

I hereby certify that the above is a true and correct copy of Resolution 88-18, as adopted by the Air Resources Board.



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Cary Allison, Board Secretary

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Notice of Public Hearing to Consider the Adoption of an Airborne Toxic Control Measure for Hexavalent Chromium Emissions from Chrome Plating and Chromic Acid Anodizing Facilities.

Agenda Item No.: 88-2-2

Public Hearing Dates: February 18, 1988

Response Date:

Issuing Authority: Air Resources Board

Comment: No comments were received identifying any significant environmental issues pertaining to this item. The staff report identified no significant adverse environmental effects.

Response: N/A

Certified: \_\_\_\_\_

*Way Allen*  
Board Secretary

Date: \_\_\_\_\_

*10/31/88*

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-19  
March 10, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1588-138 entitled "Growth, Physiological and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone," has been submitted by the University of California, Riverside;

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

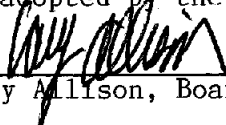
Proposal Number 1588-138 entitled "Growth, Physiological and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone," submitted by the University of California, Riverside, for a total amount not to exceed \$157,446.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1588-138 entitled "Growth, Physiological and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone," submitted by the University of California, Riverside, for a total amount not to exceed \$157,446.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$157,446.

I hereby certify that the above is a true and correct copy of Resolution 88-19, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

## B U D G E T   S U M M A R Y

University of California, Riverside

"Growth, Physiological and Biochemical Responses of Ponderosa  
Pine (Pinus ponderosa) to Ozone"

### BUDGET ITEMS:

Salaries	\$45,566	
Benefits	12,718	
Equipment	47,645	
Supplies	17,700	
Travel	12,490	
Other Costs	<u>11,345</u>	
<b>TOTAL, Direct Cost</b>		\$147,464
<b>TOTAL, Indirect Cost</b>		<u>9,982</u>
<b>TOTAL PROJECT COST</b>		<b>\$157,446</b>
		=====

### Equipment

Equipment Shelter	\$8,100
Dasibi ozone analyzer	5,000
Fisher analytic balance	2,000
Monitor NOx analyzer	9,000
Sorenson AC line regulator	2,200
Eight NCLAN type open top chambers (to be fabricated)	20,000
Fisher 3 kg balance	1,345

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-20  
March 10, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1591-138, entitled "A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants," submitted by the California Arboretum Foundation; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:


Proposal Number 1591-138, entitled "A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants," submitted by the California Arboretum Foundation, for a total amount not to exceed \$36,996.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1591-138, entitled "A Demonstration of the Effects of Smog on Ornamental and Home Garden Plants," has been submitted by the California Arboretum Foundation, for a total amount not to exceed \$36,996.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$36,996.

I hereby certify that the above is a true and correct copy of Resolution 88-20, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

## B U D G E T   S U M M A R Y

### California Arboretum Foundation

"A Demonstration of the Effects of Smog  
on Ornamental and Home Garden Plants"

#### BUDGET ITEMS:

Salaries	\$15,973	
Benefits	1,578	
Supplies	7,705	
Equipment	9,985	
Travel	<u>0</u>	

TOTAL, Direct Cost	\$35,241
TOTAL, Indirect Cost	<u>1,755</u>

TOTAL PROJECT COST	\$36,996
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#### Equipment:

Dehumidifier	\$ 360
Air Conditioner (14,000 BTU)	525
VCR (Industrial grade, VHS)	550
Monitor (19", industrial grade)	550
Cabinet (for VCR & monitor)	1,000
Display improvements & materials	<u>7,000</u>
TOTAL EQUIPMENT COST	\$9,985



**State of California**

**AIR RESOURCES BOARD**

Resolution 88-21  
March 10, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a request for budget augmentation for Contract No. A6-199-32, entitled "Cost of Reducing Aromatics and Sulfur Levels in Motor Vehicle Fuels," has been submitted by Arthur D. Little, Inc.; and

**WHEREAS**, the Research Division staff has reviewed and recommended this augmentation for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Augmentation to Contract No. A6-199-32, entitled "Cost of Reducing Aromatics and Sulfur Levels in Motor Vehicle Fuels," submitted by Arthur D. Little, Inc. by \$35,531 for a total amount not to exceed \$160,525.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Augmentation to Contract No. A6-199-32, entitled "Cost of Reducing Aromatics and Sulfur Levels in Motor Vehicle Fuels," submitted by Arthur D. Little, Inc. by \$35,531 for a total amount not to exceed \$160,525.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, by \$35,531 for a total amount not to exceed \$160,525.

I hereby certify that the above is a true and correct copy of Resolution 88-21, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

**State of California  
AIR RESOURCES BOARD**

Resolution 88-22  
March 10, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a request for budget augmentation for Contract No. A732-073, entitled "Southern California Air Quality Study: Tunable Diode Laser Absorption Spectrometer Measurements of Hydrogen Peroxide and Formaldehyde; and

**WHEREAS**, the Research Division staff has reviewed and recommended this augmentation for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Augmentation to Contract No. A732-073, entitled "Southern California Air Quality Study: Tunable Diode Laser Absorption Spectrometer Measurements of Hydrogen Peroxide and Formaldehyde," submitted by Unisearch Associates Inc. by \$9,517 for a total amount not to exceed \$49,180.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Augmentation to Contract No. A732-073, entitled "Southern California Air Quality Study: Tunable Diode Laser Absorption Spectrometer Measurements of Hydrogen Peroxide and Formaldehyde," submitted by Unisearch Associates Inc. by \$9,517 for a total amount not to exceed \$49,180.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, by \$9,517 for a total amount not to exceed \$49,180.

I hereby certify that the above is a true and correct copy of Resolution 88-22, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

**State of California  
AIR RESOURCES BOARD**

Resolution 88-23  
March 10, 1988

**WHEREAS,** the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS,** a request for budget augmentation for Contract No. A6-048-32, entitled "A Quantitative Estimate of the Air Quality Effects of Methanol Fuel Use," has been submitted by Carnegie-Mellon University; and

**WHEREAS,** the Research Division staff has reviewed and recommended this augmentation for approval; and

**WHEREAS,** the Research Screening Committee has reviewed and recommends for funding:

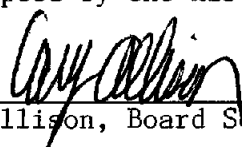
Augmentation to Contract No. A6-048-32, entitled "A Quantitative Estimate of the Air Quality Effects of Methanol Fuel Use," submitted by Carnegie-Mellon University by \$19,932 for a total amount not to exceed \$162,397.

**NOW, THEREFORE, BE IT RESOLVED,** that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Augmentation to Contract No. A6-048-32, entitled "A Quantitative Estimate of the Air Quality Effects of Methanol Fuel Use," submitted by Carnegie-Mellon University by \$19,932 for a total amount not to exceed \$162,397.

**BE IT FURTHER RESOLVED,** that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, by \$19,932 for a total amount not to exceed \$162,397.

I hereby certify that the above is a true and correct copy of Resolution 88-23, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

# Resolution

## 88-24

### Missing Resolution

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-25

April 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1570-138, entitled "Evaporative Emissions Running Loss Determination," has been submitted by the National Institute for Petroleum and Energy Research; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

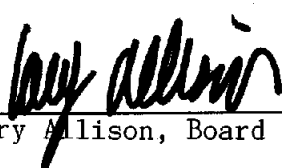
Proposal Number 1570-138, entitled "Evaporative Emissions Running Loss Determination," submitted by the National Institute for Petroleum and Energy Research, for a total amount not to exceed \$50,000.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1570-138, entitled "Evaporative Emissions Running Loss Determination," submitted by the National Institute for Petroleum and Energy Research, for a total amount not to exceed \$50,000.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$50,000.

I hereby certify that the above is a true and correct copy of Resolution 88-25, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

**ITEM NO.:** 88-5-3(b) 2  
**DATE:** April 7, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1570-138 entitled "Evaporative Emissions Running Loss Determination."

**RECOMMENDATION:** Adopt Resolution 88-25 approving Proposal No. 1570-138 for an amount not to exceed \$50,000.

**SUMMARY:** This proposal was received in response to the ARB's Request for Proposals on Innovative Control Technology. This is the second of three proposals recommended for funding in response to this RFP.

The National Institute for Petroleum and Energy Research (NIPER) proposes to investigate running loss emissions from selected motor vehicles operated under conditions representative of those in California. Running loss emissions are evaporative emissions from a vehicle while it is being driven. Such emissions have been shown to be a significant fraction of the total vehicular hydrocarbon emissions and they are not presently controlled, measured or taken into account in emission inventories.

Vehicles would be operated on a chassis dynamometer within an environmental chamber, with intake air and exhaust ducted to and from the vehicle. The hydrocarbon build-up in the chamber would be quantified and related to the test cycle. Specific emission sources on the vehicle would be identified, and their relative significance would be established. Options for control of running loss emissions would be investigated and assessed.

Running loss emissions, which only recently have been characterized by NIPER, could account for a significant portion of the disparity between the

## BUDGET SUMMARY

National Institute for Petroleum and Energy Research

"Evaporative Emissions Running Loss Determination"

### BUDGET ITEMS:

Salaries	\$13,753	
Benefits	4,194	
Travel	785	
Consultants	-0-	
Other Costs*	3,500	
<b>TOTAL, Direct Cost</b>		<b>\$22,232</b>
<b>TOTAL, Indirect Cost</b>		<b><u>27,768</u></b>
<b>TOTAL PROJECT COST</b>		<b><u>\$50,000</u></b>

\*Includes dynamometer supplies, gases, instrument components, vehicle lease, printing and miscellaneous.

**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-26**

**April 7, 1988**

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1595-138, entitled "Formaldehyde Emission Control Technology For Methanol-Fueled Vehicles," has been submitted by Southwest Research Institute;

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1595-138, entitled "Formaldehyde Emission Control Technology For Methanol-Fueled Vehicles," submitted by Southwest Research Institute, for a total amount not to exceed \$299,097.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1595-138, entitled "Formaldehyde Emission Control Technology for Methanol-Fueled Vehicles," submitted by Southwest Research Institute, for a total amount not to exceed \$299,097.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$299,097.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-26, as adopted by  
the Air Resources Board.



Cary Allison, Board Secretary



**ITEM NO.:** 88-5-3(b) 3  
**DATE:** April 7, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1595-138 entitled  
"Formaldehyde Emission Control Technology for  
Methanol-Fueled Vehicles."

**RECOMMENDATION:** Adopt Resolution 88-26 approving Proposal No.  
1595-138 for an amount not to exceed \$299,097.

**SUMMARY:** The purpose of this study is to address the  
ARB's goal of evaluating the use of clean fuels  
as a future air pollution control strategy.  
Specifically, the objective of this study is to  
develop and test the durability of emission  
control systems capable of reducing formaldehyde  
emissions from methanol-fueled vehicles. The  
target level for formaldehyde emissions  
reduction is the same concentration level  
currently emitted by gasoline-fueled vehicles,  
without adversely affecting control of criteria  
pollutants. The control systems will be  
developed for four vehicles, including two  
dedicated methanol fuel and two flexible fuel  
vehicles. Following development of the control  
systems, the vehicles would be provided to the  
ARB staff for 100,000-mile durability testing.

The contractor is Southwest Research Institute  
and the principal investigator is Mr. Harry  
Dietzmann.

## B U D G E T   S U M M A R Y

Southwest Research Institute

"Formaldehyde Emission Control Technology  
For Methanol-Fueled Vehicles."

### BUDGET ITEMS:

Salaries	\$64,089
Benefits	24,995
Travel	1,700
Supplies	16,285
Other Costs*	<u>61,500</u>

TOTAL, Direct Cost	\$168,569
TOTAL, Indirect Cost	<u>130,528</u>

TOTAL PROJECT COST	\$299,097
=====	

\*Of this amount, \$60,000 is for the purchase of four methanol-fueled vehicles that will be delivered to the ARB for long-term durability testing and which will be the property of the State at the conclusion of this study.

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-27

April 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1566-137R entitled "Hydroxynitro-PAH and Other PAH Derivatives in California's Atmosphere and Their Contribution to Ambient Mutagenicity," has been submitted by the University of California, Riverside;

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1566-137R, entitled "Hydroxynitro-PAH and Other PAH Derivatives in California's Atmosphere and Their Contribution to Ambient Mutagenicity," submitted by the University of California, Riverside, for a total amount not to exceed \$273,609.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1566-137R, entitled "Hydroxynitro-PAH and Other PAH Derivatives in California's Atmosphere and Their Contribution to Ambient Mutagenicity," submitted by the University of California, Riverside, for a total amount not to exceed \$273,609.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$273,609.

I hereby certify that the above is a true and correct copy of Resolution 88-27, as adopted by the Air Resources Board.

  
Cary Alvison, Board Secretary

ITEM NO.: 88-5-3(b) 4  
DATE: April 7, 1988

State of California  
AIR RESOURCES BOARD

**ITEM:** Research Proposal No. 1566-137R entitled  
"Hydroxynitro-PAH and Other PAH Derivatives in  
California's Atmosphere and Their Contribution  
to Ambient Mutagenicity"

**RECOMMENDATION:** Adopt Resolution 88-27 approving Proposal No. 1566-  
137R for funding in an amount not to exceed \$273,609  
(two year effort)

**SUMMARY:** Polycyclic aromatic hydrocarbons (PAHs) are candidate  
toxic air contaminants of great concern throughout  
California. The objective of this study is to  
identify and quantify the concentrations of  
PAHs in the atmosphere, in both the particle and  
vapor phases, that contribute to the mutagenicity and  
carcinogenicity of the atmosphere. PAHs emitted from  
combustion sources and transformed in a smoggy  
atmosphere to more highly polar compounds exhibit  
direct-acting mutagenic properties in the Ames short-  
term bioassay. To date, only about 10 percent of the  
responsible compounds have been identified.

Although the atmospheric chemistry of aromatic  
compounds and the PAHs is still not well understood  
with respect to reaction products formed under  
atmospheric conditions, University of California  
investigators have now identified the process that  
produce many of them.

The successful identification and quantification of  
these compounds will allow their carcinogenic

## BUDGET SUMMARY

University of California, Riverside

"Hydroxynitro-PAH and Other PAH Derivatives in California's  
Atmosphere and Their Contribution to Ambient Mutagenicity

### BUDGET ITEMS:

Salaries	\$163,807	
Benefits	42,036	
Supplies	19,742	
Other Costs*	17,400	
Travel	5,750	
<b>TOTAL, Direct Cost</b>		<b>\$248,735</b>
<b>TOTAL, Indirect Cost</b>		<b><u>24,874</u></b>
<b>TOTAL PROJECT COST</b>		<b><u>\$273,609</u></b>

\*Maintenance of analytical systems, report preparation

Resolution

88-28

No Resolution

**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-29  
April 7, 1988**

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1582-138, entitled "Evaluation of Membrane Materials as Innovative Volatile Organic Control Devices," has been submitted by Radian Corporation; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1582-138, entitled "Evaluation of Membrane Materials as Innovative Volatile Organic Control Devices," submitted by Radian Corporation, for a total amount not to exceed \$49,995.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee to proceed with the proposed research project and approves the following:

Proposal Number 1582-138, entitled "Evaluation of Membrane Materials as Innovative Volatile Organic Control Devices," submitted by Radian Corporation, for a total amount not to exceed \$49,995, provided that a minimum of 25 percent of the total amount be funded by sources other than the Air Resource Board.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$37,496.

I hereby certify that the above is a true and correct of Resolution 88-29, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary

ITEM NO.: 5

DATE: April 7, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1582-138 entitled  
"Evaluation of Membrane Materials as Innovative  
Volatile Organic Control Devices"

**RECOMMENDATION:** Adopt Resolution 88-29 approving Proposal No. 1582-  
138 for an amount not to exceed \$49,995.

**SUMMARY:** This proposal was received in response to the ARB's  
Request for Proposals on Innovative Control  
Technology. This is the third of three proposals  
recommended for funding in response to this RFP.

Radian proposes to demonstrate the applicability of  
membrane technology as a preconcentrating step for  
other conventional volatile organic compound (VOC)  
control devices such as carbon adsorption or  
incineration. The advantage of using the membrane as  
a preconcentrator is reduction of the size and cost  
of the conventional control device. Use of membranes  
may make conventional control devices more cost-  
effective and more readily applicable to sources of  
VOC that have concentrations too low for practical  
application of conventional emission control  
technology.

Specifically, Radian proposes to test several  
combinations of VOC/membrane materials on a bench-  
scale and use the resulting data to develop  
preliminary conceptual system designs. With these  
conceptual designs, Radian would provide cost  
estimates for both the capital and operating costs of  
the membrane assisted system, and compare these costs  
to the costs of systems which do not utilize the VOC  
preconcentrator.



## B U D G E T   S U M M A R Y

Radian Corporation

"Evaluation of Membrane Materials as  
Innovative Volatile Organic Control Devices"

### BUDGET ITEMS:

Salaries	\$14,193	
Benefits	-0-	
Travel	1,600	
Consultants	-0-	
Other Costs*	5,460	
 TOTAL, Direct Cost		\$21,253
TOTAL, Indirect Cost		28,742
  TOTAL PROJECT COST		  \$49,995

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\*Includes standard gases, miscellaneous supplies, printing and mail.

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-29

April 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1582-138, entitled "Evaluation of Membrane Materials as Innovative Volatile Organic Control Devices," has been submitted by Radian Corporation; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1582-138, entitled "Evaluation of Membrane Materials as Innovative Volatile Organic Control Devices," submitted by Radian Corporation, for a total amount not to exceed \$49,995.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1582-138, entitled "Evaluation of Membrane Materials as Innovative Volatile Organic Control Devices," submitted by Radian Corporation, for a total amount not to exceed \$49,995.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$49,995.

I hereby certify that the above is a true and correct copy of Resolution 88-29, as adopted by the Air Resources Board.



Cary Allison, Board Secretary

## BUDGET SUMMARY

Radian Corporation

"Evaluation of Membrane Materials as  
Innovative Volatile Organic Control Devices"

### BUDGET ITEMS:

Salaries	\$14,193	
Benefits	-0-	
Travel	1,600	
Consultants	-0-	
Other Costs*	5,460	
<b>TOTAL, Direct Cost</b>		<b>\$21,253</b>
<b>TOTAL, Indirect Cost</b>		<b>28,742</b>
<b>TOTAL PROJECT COST</b>		<b>\$49,995</b>

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\*Includes standard gases, miscellaneous supplies, printing and mail.

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-30  
April 7, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1592-138, entitled "Hydrocarbon Emissions from Vegetation Found in California's Central Valley," submitted by the University of California, Riverside; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1592-138, entitled "Hydrocarbon Emissions from Vegetation Found in California's Central Valley," submitted by the University of California, Riverside, for a total amount not to exceed \$169,983.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1592-138, entitled "Hydrocarbon Emissions from Vegetation Found in California's Central Valley," submitted by the University of California, Riverside, for a total amount not to exceed \$169,983.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$169,983.

I hereby certify that the above is a true and correct copy of Resolution 88-30, as adopted by the Air resources Board.

  
Cary Allison, Board Secretary

**ITEM NO.:** 88-5-3(b) 6  
**DATE:** April 7, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1592-138 entitled  
"Hydrocarbon Emissions from Vegetation Found  
in California's Central Valley"

**RECOMMENDATION:** Adopt Resolution 88-30 approving Proposal No. 1592-  
138 for an amount not to exceed \$169,983.

**SUMMARY:** The purpose of this project is to determine  
experimentally the emission rates and chemical  
composition of organic gases from types of vegetation  
that are most likely to affect oxidant formation in  
the Central Valley.

The University of California, Riverside, would obtain  
sunlight- and temperature-dependent, speciated  
hydrocarbon emissions data for thirty of the most  
important agricultural crops and natural species of  
vegetation in the Central Valley. UCR would also  
determine the corresponding leaf biomass of the plant  
specimens whose hydrocarbon emission fluxes are  
measured. These data will be obtained in a form  
directly applicable to the reactive organic gas  
emissions inventory for the Central Valley.

Data from this study will be used to upgrade the  
ARB's Emission Inventory in order to improve the  
reliability of air quality strategies developed for  
the Central Valley. This project would complement  
the Board's efforts through the Joint Powers Agency  
to improve capabilities for ozone modeling in the  
Central Valley.

The contractor would be the University of California  
at Riverside and the principal investigator would be  
Dr. Arthur M. Winer.

## BUDGET SUMMARY

University of California, Riverside

"Hydrocarbon Emissions from Vegetation  
Found in California's Central Valley"

### BUDGET ITEMS:

Salaries	\$108,600	
Benefits	29,555	
Travel	2,150	
Consultants	-0-	
Other Costs*	14,370	
<b>TOTAL, Direct Cost</b>		<b>\$154,675</b>
<b>TOTAL, Indirect Cost</b>		<b><u>15,308</u></b>
<b>TOTAL PROJECT COST</b>		<b><u>\$169,983</u></b>

\*Supplies including chromatography equipment, gas standards, elution gases, fittings, pipe, pots, fertilizer, etc. Equipment including sensors, gas mixing system, calibration and shop charges.

**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-31**

**April 7, 1988**

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1596-138, entitled "Study of Economic Incentives to Control Photochemically Reactive Organic Compound Emissions From Consumer Products," has been submitted by ICF Technology, Incorporated;

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

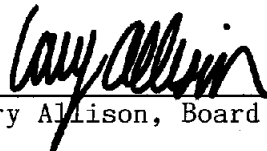
**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1596-138, entitled "Study of Economic Incentives to Control Photochemically Reactive Organic Compound Emissions From Consumer Products," submitted by ICF Technology, Incorporated, for a total amount not to exceed \$106,318.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1596-138, entitled "Study of Economic Incentives to Control Photochemically Reactive Organic Compound Emissions From Consumer Products," submitted by ICF Technology, Incorporated, for a total amount not to exceed \$106,318.

I hereby certify that the above is a true and correct copy of Resolution 88-31, as adopted by the Air Resources Board.



Cary Allison, Board Secretary

**ITEM NO.:** 88-5-3(b) 7  
**DATE:** April 7, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No.1596-138 titled "Study of Economic Incentives to Control Photochemically Reactive Organic Compound Emissions From Consumer Products"

**RECOMMENDATION:** Adopt Resolution 88-31 approving Proposal No. 1596-138 for an amount not to exceed \$106,318.

**SUMMARY:** The purpose of this project is to assist the Board in evaluating the feasibility of economic incentives to reduce emissions from sources which cannot be effectively controlled through direct regulation.

Certain consumer products contain solvents which evaporate into the air upon product use and which substantially contribute to formation of ozone. Efforts by the ARB and local districts to control solvents in such products (e.g., paints) using direct regulation have reduced emissions only slightly in the last decade. Population and economic growth have and will continue to cause increased product use and associated emissions. A more effective approach than direct regulation seems to be needed.

This project investigates and evaluates economic incentives as a potentially effective approach to control emissions from solvents. In particular, this study would select one consumer product category to use as a "test case" for designing economic incentives. Researchers would identify potentially viable approaches to using economic incentives, and would determine, for the most promising approaches: expected emissions reductions, cost effectiveness,



**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-32**

**April 7, 1988**

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1599-138, entitled "Activity Patterns of California Children: A Micro-behavioral Approach," has been submitted by University of California, Berkeley; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1599-138, entitled "Activity Patterns of California Children: A Micro-behavioral Approach," submitted by University of California, Berkeley, for a total amount not to exceed \$199,995.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1599-138, entitled "Activity Patterns of California Children: A Micro-behavioral Approach," submitted by University of California, Berkeley, for a total amount not to exceed \$199,995.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$199,995.

I hereby certify that the above is a true and correct copy of Resolution 88-32, as adopted by the Air Resources Board.



Cary Allison, Board Secretary

ITEM NO.: 88-5-3(b) 8  
DATE: April 7, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1599-138 entitled  
"Activity Patterns of California Children:  
A Micro-behavioral Approach"

**RECOMMENDATION:** Adopt Resolution 88-32 approving Proposal No. 1599-138 for an amount not to exceed \$199,995.

**SUMMARY:** Realistic health risk assessments for air pollutants require representative data on activity patterns of Californians. Because children are inherently more sensitive and more exposed than adults to many toxic substances, characterization of children's activity patterns is very important for making realistic exposure or dose estimates. However, existing data on children are inadequate because they apply only to limited population subgroups or employ inappropriate methodology.

The purpose of this study is to obtain statistically representative information with respect to the time California's children under 12 years of age spend in various locations and activities. A random sample of households will be selected and detailed activity and location data will be obtained by phone interviews of children, the most knowledgeable adult, or both, depending on the child's age. Interviewers will help the interviewer develop a 24-hour "diary" and ask supplemental questions regarding pollutant exposures. The methods will be pre-tested and checked for parental recall bias. The study will begin in July 1988 and last for two years. Principal investigators are Dr. James A. Wiley and Dr. John P. Robinson of the University of California, Berkeley.

This study will provide information necessary for realistic dose estimates--and consequently, improved public health risk estimates--for both criteria pollutants and toxic air contaminants in California. This study will complement an ongoing, ARB-sponsored study of adult and adolescent activity patterns. It will also help meet high-priority data needs identified by ARB's Indoor Air Quality Five-year Study Plan and the National Academy of Sciences.

## BUDGET SUMMARY

University of California, Berkeley

"Activity Patterns of California Children:  
A Micro-behavioral Approach"

### BUDGET ITEMS:

Salaries	\$114,149	
Benefits	27,008	
Supplies	11,907	
Travel	100	
Other Costs*	28,650	
<b>TOTAL, Direct Cost</b>		<b>\$181,814</b>
<b>TOTAL, Indirect Cost</b>		<b>18,181</b>
<b>TOTAL PROJECT COST</b>		<b>\$199,995</b>

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\* Other costs specific to survey: telephone (\$12,650), computer time and processing (\$10,700), computer programming (\$5,300).

**State of California  
AIR RESOURCES BOARD**

**Resolution 88-33**

**April 7, 1988**

WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

WHEREAS, a unsolicited research proposal, Number 1601-138, entitled "Monitoring Community Exposure and Responses to Hydrogen Sulfide," has been submitted by the Lake County Air Quality Management District.

WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and

WHEREAS, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1601-138, entitled "Monitoring Community Exposure and Responses to Hydrogen Sulfide," submitted by the Lake County Air Quality Management District for a total amount not to exceed \$57,925.

NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1601-138, entitled "Monitoring Community Exposure and Responses to Hydrogen Sulfide," submitted by the Lake County Air Quality Management District, for a total amount not to exceed \$57,925.

BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$57,925.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-33, as adopted by  
the Air Resources Board.

  
Cary Allison, Board Secretary

**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-34**

**May 13, 1988**

**WHEREAS**, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 39900 through 39915; and

**WHEREAS**, an unsolicited research proposal, Number 174-27, entitled "Monitoring at Sequoia National Park," has been submitted by National Park Service; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

Proposal Number 174-27, entitled "Monitoring at Sequoia National Park," submitted by National Park Service for a total amount not to exceed \$6,000.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

Proposal Number 174-27, entitled "Monitoring at Sequoia National Park," submitted by National Park Service for a total amount not to exceed \$6,000.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein, in an amount not to exceed \$6,000.

I hereby certify that the above is a true and correct copy of Resolution 88-34, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary

ITEM NO.: 88-7-3(b) 1  
DATE: May 13, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 174-27 entitled  
"Monitoring at Sequoia National Park"

**RECOMMENDATION:** Adopt Resolution 88-34 approving Proposal No.  
174-27 for an amount not to exceed \$6,000.

**SUMMARY:** The purpose of this project is to provide  
support for deposition monitoring activities in  
Sequoia National Park (SNP), which is included  
in the State's routine monitoring network for  
fog, wet deposition, and dry deposition. SNP  
is also the site of the Board's Integrated  
Watershed Study, which is designed to determine  
the impact of acid deposition and other air  
pollutants on sensitive lakes, streams and  
aquatic biota.

The National Park Service will maintain and  
operate monitoring equipment in the Park to  
measure wet deposition, dry deposition and fog.  
Wet and dry deposition of acidic materials are  
collected on a weekly schedule; fog sampling  
occurs during heavy fog events. This project  
provides monitoring support for one year.

This monitoring work will be coordinated by  
Mr. Tom Nichols of the National Park Service,  
Sequoia National Park.

**State of California**  
**AIR RESOURCES BOARD**

Resolution 88-35  
May 13, 1988

**WHEREAS**, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code 39900 through 39915; and

**WHEREAS**, an unsolicited research proposal, Number 175-27, entitled "Assessment of the Ecological Effects of Acid Deposition in California," has been submitted by the University of California, Berkeley; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

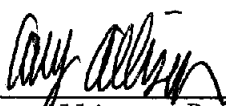
Proposal Number 175-27, entitled "Assessment of the Ecological Effects of Acid Deposition in California," submitted by University of California, Berkeley, for a total amount not to exceed \$21,000.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee and approves the following:

Proposal Number 175-27, entitled "Assessment of the Ecological Effects of Acid Deposition in California," submitted by University of California, Berkeley, for a total amount not to exceed \$21,000.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$21,000.

I hereby certify that the above is a true and correct copy of Resolution 88-35, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary



ITEM NO.: 88-7-43(b) 2  
DATE: May 13, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 175-27 entitled  
"Assessment of the Ecological Effects of Acid  
Deposition in California"

**RECOMMENDATION:** Adopt Resolution 88-35 approving Proposal No.  
175-27 for an amount not to exceed \$21,000.

**SUMMARY:** The purpose of this study is to compile, analyze  
and interpret lake, watershed and deposition  
data collected during the Kapiloff Acid  
Deposition Research and Monitoring Program.  
This synthesis of data generated during the  
5-year program will be included in the final  
scientific assessment being prepared for the  
Governor and the Legislature.

The Kapiloff Act calls for an evaluation of the  
vulnerability of natural ecosystems in  
California to acid deposition. A number of  
field and laboratory projects have been carried  
out to collect data on the effects of acid  
deposition in the Sierra. These data bases need  
to be integrated to help determine dose-response  
relationships for sensitive aquatic systems in  
order to complete the Board's baseline studies  
of ecosystem impacts.

Researchers from U.C. Berkeley will compile and  
integrate the data bases from the deposition and  
effects research, and perform statistical  
analyses on the data.

The work will be carried out by Dr. Charles  
Blanchard from the University of California,  
Berkeley.

State of California

**AIR RESOURCES BOARD**

Resolution 88-36

May 13, 1988

**WHEREAS**, the Air Resources Board has been directed to design and implement a comprehensive program of research and monitoring of acid deposition in California pursuant to Health and Safety Code Sections 3900 through 39915; and

**WHEREAS**, unsolicited research proposal, Number 176-27, entitled "Characterizing Nitric Acid Formation in an Exposure Chamber," has been submitted by University of California at Irvine; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Scientific Advisory Committee on Acid Deposition has reviewed and recommends for funding:

Proposal Number 176-27 entitled "Characterizing Nitric Acid Formation in an Exposure Chamber," submitted by University of California, at Irvine for a total amount not to exceed \$18,803.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39906, hereby accepts the recommendation of the Scientific Advisory Committee on Acid Deposition and approves the following:

Proposal Number 176-27, entitled "Characterizing Nitric Acid Formation in an Exposure Chamber," submitted by University of California, at Irvine for a total amount not to exceed \$18,803.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and executive all necessary documents and contracts for the research effort proposed herein, in an amount not to exceed \$18,803.

I hereby certify that the above is a true and correct copy of Resolution 88-36, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

ITEM NO.: 88-7-3(b) 3  
DATE: May 13, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 176-27 entitled  
"Characterizing Nitric Acid Formation in an  
Exposure Chamber".

**RECOMMENDATION:** Adopt Resolution 88-36 approving Proposal No.  
176-27 for an amount not to exceed \$18,803.

**SUMMARY:** In recent exposure studies, animals have shown enhanced response to treatments containing both ozone and nitrogen dioxide. However, because these two pollutants can react in the chamber to form nitric acid and other potentially harmful products, it is unclear which compound(s) is causing the enhanced effects and at what levels. The purpose of this measurement study is to determine which compound(s) is the causative agent.

This study will employ a sophisticated Fourier transform infrared spectrometer, which is being loaned to the investigators, to analyze test atmospheres for nitric acid, related compounds, and other pollutants. One test atmosphere will duplicate the atmosphere employed in the earlier animal study. The acids will also be measured using more routine filtration methods for comparison.

Nitric acid is the dominant strong acid in the Los Angeles atmosphere, and it is the dominant acid in deposition in many areas throughout the State. In order to determine the potential impact on health, it is essential to measure accurately the levels of nitric acid and related pollutants that affect test animals.

The contractor is the University of California, Irvine. The principal investigator is Dr. Michael Kleinman.

## B U D G E T   S U M M A R Y

University of California, Irvine

"Formation of Nitric Acid in an  
Exposure Chamber"

### BUDGET ITEMS:

Salaries and Benefits	\$ 4,341	
Materials and Supplies	300	
Other*	<u>13,698</u>	
<b>TOTAL, Direct Cost</b>		<b>\$18,339</b>
<b>TOTAL, Indirect Cost</b>		<b><u>464</u></b>

**TOTAL PROJECT COST** **\$18,803**  
=====

\*Other:

Subcontract with Cal State Fullerton;

Salaries	\$ 9,344
Benefits	1,121
Supplies	<u>1,988</u>
Direct Cost	12,453
Indirect Cost	<u>1,245</u>
	<b>\$13,698</b>

State of California  
AIR RESOURCES BOARD

Resolution 88-37

May 12, 1988

Agenda Item No.: 88-6-3

WHEREAS, Section 39601 of the Health and Safety Code authorizes the Air Resources Board (the "Board") to adopt standards, rules, and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, Sections 41850 through 41864 of the Health and Safety Code authorize the Board to adopt regulations and guidelines necessary for the control, but not complete prohibition of, agricultural burning as defined in Section 39011 of the Health and Safety Code;

WHEREAS, Section 41855 of the Health and Safety Code authorizes the Board to designate days when agricultural burning shall be prohibited on the basis of meteorological data;

WHEREAS, Sections 41856 through 41858 of the Health and Safety Code authorize the Board to promulgate guidelines for the control of agricultural burning in each air basin, with consideration given to the ambient air quality impacts and economic effects of such guidelines;

WHEREAS, Title 17, California Code of Regulations, Section 80210 presently contains the meteorological criteria for declaring permissive-burn days in the South Central Coast Air Basin (San Luis Obispo, Santa Barbara, and Ventura Counties);

WHEREAS, Section 41859 of the Health and Safety Code authorizes the Board to review the agricultural burning guidelines periodically, and to modify, repeal or alter such guidelines if scientific and technological data indicate that such a change is warranted;

WHEREAS, the Air Pollution Control Officer of the San Luis Obispo County Air Pollution Control District has requested that the Board review the agricultural burning guidelines applicable to the South Central Coast Air Basin;

WHEREAS, the staff has proposed that the permissive-burn day criteria for the South Central Coast Air Basin be amended to divide the air basin into three subdivisions and to provide for separate permissive-burn day determinations for each subdivision based on criteria applicable to the specific subdivision;

WHEREAS, the California Environmental Quality Act and the Board's regulations require that an action not be adopted as proposed where it will have significant adverse environmental impacts and alternatives or feasible

mitigation measures to the proposed action are available which would substantially reduce such impacts;

WHEREAS, the staff and the South Central Coast Air Basin air pollution control districts have conducted workshops in the air basin on the proposed amendments;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of the Administrative Procedure Act, Title 2, Division 3, Part 1, Chapter 3.5 (commencing with Section 11340) of the Government Code; and

WHEREAS, the Board finds that:


The amendments to Title 17, California Code of Regulations, Section 80210 proposed by staff and set forth in Attachment A hereto will more closely match the permissive burn criteria in the South Central Coast Air Basin to the meteorological conditions in the three designated subdivisions in the air basin;

The amendments set forth in Attachment A are warranted in light of available scientific and technological data;

The proposed amendments will improve the existing level of air quality in the South Central Coast Air Basin, and will not result in any significant adverse environmental impacts.

NOW, THEREFORE, BE IT RESOLVED that the the Board hereby amends Title 17, California Code of Regulations, Section 80210, as set forth in Attachment A hereto.

I hereby certify that the above is a true and correct copy of Resolution 88-37, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison  
Board Secretary

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Amendments to Agricultural Burning  
Regulations for the South Central Coast Air Basin

Agenda Item No.: 88-6-3

Public Hearing Date: May 12, 1988

Response Date: May 12, 1988

Issuing Authority: Air Resources Board

Comment: The Board should amend the amendments and simply ban agricultural burning. Instead of burning agricultural material such as sugar peas vines, farmers should till the vines into the soil. Sugar peas are a kind of legume that when tilled can fix nitrogen in the soil. Failure to do so contributes to farmers being on the pesticide treadmill because the natural cycle is broken. Farmers end up having to use more and more pesticides, which are the byproduct of the oil refining industry. This is not a healthy thing to do. Burning not only pollutes the air, but also damages a valuable resource that the farmers actually need. (Lee Hudson, Group for Alternatives for Spreading Poisons.)

Response: The amendments are not expected to increase agricultural burning. On the contrary, the staff report contains data showing that the number of permissive-burn days in the South Central Coast Air Basin would be expected to decrease somewhat as a result of the amendments. The Staff Report identified no significant adverse environmental effects. Health and Safety Code Section 41850 expresses the Legislature's intent that agricultural burning be reasonably regulated and not prohibited. Thus the Board presently lacks the statutory authority to ban agricultural burning altogether.

Certified: \_\_\_\_\_

*Ray Allison*  
Board Secretary

Date: \_\_\_\_\_

*6/24/88*

State of California  
AIR RESOURCES BOARD

Resolution 88-38

May 12, 1988

Agenda Item No.: 88-6-2

WHEREAS, Health and Safety Code Section 39600 requires the Air Resources Board ("Board") to do such acts as may be necessary for the proper execution of the powers and duties granted to, and imposed upon, the Board;

WHEREAS, Health and Safety Code Section 41701.5 requires the Air Resources Board, in consultation with local air pollution control districts, to prepare and submit to the California Legislature by July 1, 1988, a study to determine whether it is technically and economically feasible for diesel pile-driving hammers to meet shade and opacity standards which are more stringent than number 2 on the Ringelmann Chart, as published by the United States Bureau of Mines;

WHEREAS, the Board staff, in consultation with the districts, has prepared a report entitled "Report to the California Legislature on the Ability of Diesel Pile-Driving Hammers to Meet Opacity Standards";

WHEREAS, the Board has held a duly noticed public meeting at which it received public comments and considered the draft report prepared and presented by the staff; and

WHEREAS, the Board finds that the report prepared by the staff responds to the mandate of the Legislature.

NOW, THEREFORE, BE IT RESOLVED that the Air Resources Board approves the report entitled "Report to the California Legislature on the Ability of Diesel Pile-Driving Hammers to Meet Opacity Standards" and directs the Executive Officer to forward the report to the Legislature and the appropriate legislative committees.

I hereby certify that the above is a true and correct copy of resolution 88-38, as adopted by the Air Resources Board.



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Cary Allison  
Board Secretary



# Resolution

## 88-39

### Missing Resolution

State of California  
AIR RESOURCES BOARD

Resolution 88-40

June 9, 1988

Agenda Item No.: 88-8-3

WHEREAS, Health and Safety Code Section 39600 requires the Air Resources Board (the "Board") to do such acts as may be necessary for the proper execution of the powers and duties granted to, and imposed upon, the Board;

WHEREAS, Government Code Section 66796.54(b) requires the Board to submit two reports to the Legislature on the testing of landfill gases, summarizing the extent of hazardous wastes in landfills and the potential effects these hazardous wastes may have on ambient air quality, and recommending actions needed to protect the quality of the air;

WHEREAS, the first report is due to the Legislature on July 1, 1988;

WHEREAS, the staff has prepared a report entitled "The Landfill Gas Testing Program: A Report to the Legislature;"


WHEREAS, the report describes the status of the landfill gas testing program being conducted pursuant to AB 3374 (Stats. 1986, ch. 1055), indicates that approximately 450 active landfills are being tested statewide, and summarizes the data from the seven active landfills for which reports have been submitted to the Board to date;

WHEREAS, the Board has held a duly noticed public meeting at which it considered the draft report and afforded an opportunity for public comment; and

WHEREAS, the Board finds that the report proposed by the staff responds to the mandate of the Legislature given the data available at this time.

NOW, THEREFORE, BE IT RESOLVED that the Air Resources Board approves the report entitled "Status of the Landfill Gas Testing Program: A Report to the Legislature," and directs the Executive Officer to forward the report to the appropriate legislative committees.

I hereby certify that the above is a true and correct copy of resolution 88-40, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

Air Resources Board Comments on  
Ventura County APCD Proposed Rules 72 and 73

The proposed adoption by reference of EPA Title 40, Code of Federal Regulations (CFR) Part 61 is acceptable, however, we have the following comment with respect to the adoption of EPA Title 40, Chapter 1, Part 60.

We have included a copy of a revised version of the New Source Performance Standards (Title 40, Chapter 1, Part 60). The modifications made in this NSPS version are noted and should be incorporated into Ventura's Rule 72.

State of California  
AIR RESOURCES BOARD

Resolution 88-41

June 9, 1988

Agenda Item No.: 88-8-2

WHEREAS, the Air Resources Board (the "Board") is the state agency charged with coordinating efforts to attain and maintain ambient air quality standards, and Health and Safety Code Section 39600 requires the Board to do such acts as may be necessary for the proper execution of the powers and duties granted to, and imposed upon, the Board;

WHEREAS, Health and Safety Code Section 41605.5, as enacted by the Legislature in 1983, required air pollution control districts ("districts") to include the incremental emission benefits in considering the emission offset requirements for projects which generate steam or electricity and which use as fuel agricultural waste products, forest waste products, or similar organic wastes ("biomass") which would otherwise have been disposed of by open field or by forest land burning;

WHEREAS, Health and Safety Code Section 41605.5 also directed the Board and the districts to develop, in cooperation, a procedure to be used to determine the magnitude of the agricultural offsets available to the facilities which burn biomass for the production of steam or electricity;

WHEREAS, in 1984, the Board approved "A Procedure to Implement the Provisions of Health and Safety Code Section 41605.5 (AB 1223); Relating to the Determination of Agricultural/Forestry Emission Offset Credits" as developed by the Board and the districts;

WHEREAS, Health and Safety Code Section 41605.5, as amended in 1987 by AB 2158 (Ch. 565, Stats. 1987), requires the Board and the districts, in cooperation, to develop on or before July 1, 1988, a procedure to determine the availability and magnitude of the emission offsets available to facilities which burn biomass for the production of steam or electricity or which use biomass as a digester feedstock and also to assure that state and federal ambient air quality standards may be achieved and maintained, or that reasonable further progress be made toward attainment;

WHEREAS, in response to the mandate of AB 2158, the Board staff, Environmental Protection Agency staff, and representatives of the California Air Pollution Control Officers Association have updated and revised the procedure approved by the Board in 1984 retitling it "A Procedure Relating to the Determination of Agricultural/Forestry Waste Emission Offset Credits" (the "Procedure");

WHEREAS, at a duly noticed public meeting, the Board received and considered comments on the proposed Procedure;

WHEREAS, the California Environmental Quality Act and Board regulations require that action not be taken as proposed if feasible mitigation measures or alternatives exist which would substantially reduce any significant adverse environmental effects of the proposed action;

WHEREAS, evidence has been presented that the permitting of projects under Health and Safety Code Sections 41605.5 and 42314.5 in the San Joaquin Valley Air Basin has resulted in a net increase during certain times of the year of pollutants and precursors of pollutants which exceed federal and state ambient air quality standards.

WHEREAS, the Board finds that the proposed Procedure fulfills the requirements of Health and Safety Code Section 41605.5; and

WHEREAS, the Board finds that the Procedure will have a beneficial effect on air quality and will have no adverse environmental impacts; and


WHEREAS, the Board finds that more detailed information on the impacts of the agricultural offset program is needed to consider the inclusion of an emissions profiling requirement in the Procedure.

NOW, THEREFORE, BE IT RESOLVED that the Air Resources Board hereby approves the Procedure.

BE IT FURTHER RESOLVED that the staff is directed to return to the Board within six months with more detailed information on the impacts of the agricultural offset program and recommendations concerning an emissions profiling requirement, a procedure for addressing changes in fuel mix, and any other amendments to the Procedure which would further assure protection of air quality.

BE IT FURTHER RESOLVED that the Executive Officer shall forward the Procedure to the air pollution control districts to supersede the existing Procedure and for their consideration and adoption in regulatory form in their new source review programs.

I hereby certify that the above is a true and correct copy of resolution 88-41, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

State of California

MEMORANDUM

To : Gordon Van Vleck  
Secretary  
Resources Agency

Date : August 24, 1988

Subject : Filing of Notice of  
Decisions of the Air  
Resources Board

  
Cary Allison  
Board Secretary

From : Air Resources Board

Pursuant to Title 17, Section 60007 (b), and in compliance with Air Resources Board certification under Section 21080.5 of the Public Resources Code, the Air Resources Board hereby forwards for posting the attached notice of decisions and response to environmental comments raised during the comment period.

ATTACHMENTS

87-30  
87-62  
87-82  
87-83  
87-90  
87-91  
87-92  
87-95  
88-9  
88-41

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Meeting to Consider Approval of a Procedure Relating to the Determination of Agricultural/Forestry Emission Offset Credits (AB 2158, Condit, 1987)

Public Meeting Date: June 9, 1988

Issuing Authority: Air Resources Board

Comment: The staff report identified no adverse environmental effects. One commenter stated the belief that the Procedure as proposed at the public consultation workshop would cause significant adverse effects on the environment and that the Air Resources Board should prepare an environmental impact report (EIR) to address these impacts. (See Appendix B to Staff Report.)

Response: In the Staff Report, at pages 18-19, staff responded to the comment as follows:

"With respect to the commenter's concern about the environmental and economic impacts of the Ag offset procedure, it should be noted first that the Board's action (or "project" within the meaning of CEQA) is the modification of the existing procedure, adopted in 1984. Thus the question under CEQA is whether any of the changes have the potential to cause significant adverse impacts. The commenter focussed on the proposed change in the procedure from an annual to a monthly profile for the calculation of Ag offsets, which, according to the commenter, would cause the cancellation of one of the commenter's projects and would have similar results throughout the biomass industry. As a further result of the elimination of these projects, the commenter identified adverse effects on the environment due to greater open field burning, energy losses and waste disposal problems.

"We note first that the proposed procedure no longer includes the monthly profile requirement. Thus, there is not longer any basis for the claimed impacts predicated on the inclusion of the monthly profiling requirement. In any event, the impacts described by the commenter are speculative. We are aware of no evidence which indicates that fewer biomass facilities would be permitted under the proposed modified procedure than under the existing procedure. Compliance with district new source review and other rules, as well as state and federal law, is required equally under the existing and proposed procedures. Moreover, we have no evidence that, even if fewer

biomass facilities were sited, there would be energy losses or the exacerbation of any waste disposal problems. Therefore, to the extent that the procedure as modified guides the districts to impose more stringent requirements on the siting of new biomass facilities, these are actions which will benefit air quality and will not result in any adverse environmental impacts."

Certified: \_\_\_\_\_

  
Board Secretary

Date: \_\_\_\_\_

8/24/88



STATE OF CALIFORNIA  
Air Resources Board

Resolution 88-42

July 14, 1988

Agenda Item No.: 88-9-3

WHEREAS, Sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the "Board") to adopt standards, rules and regulations and to do such acts as may be necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, the Legislature found in the Air Toxics "Hot Spots" Information and Assessment Act of 1987 ("the Act," Health and Safety Code Section 44300 et seq.) that facilities manufacturing or using hazardous substances may be exposing nearby populations to toxic air releases on a routine basis and that it is in the public interest to ascertain the nature and quantity of hazardous releases from specific sources which may create air toxics "hot spots";

WHEREAS, the Act sets forth a program to develop air toxics emission inventories and to assess the risk to public health from exposure to these emissions;

WHEREAS, Health and Safety Code Section 44380(a) requires the Board to adopt a fee schedule by August 1, 1988 which assesses a fee upon the operator of every facility subject to the Act in order to recover the anticipated costs of the Board, local air pollution control districts ("districts"), and the Department of Health Services of implementing and administering the Act;

WHEREAS, Health and Safety Code Section 44383 directs the Board to adopt rules or regulations to implement Section 44380 as emergency regulations in accordance with Section 11346.1 of the Government Code;

WHEREAS, Board staff, in consultation with representatives of the districts and the technical review group convened pursuant to Health and Safety Code 44380(b), has developed a proposed fee regulation for fiscal year 1988-89 which has been discussed with the public at four consultation meetings;

WHEREAS, Health and Safety Code Section 44321 requires the Board to compile and maintain a list of specified toxic substances for use in determining which facilities are subject to the regulations;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project which may have significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to reduce or eliminate such impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, the Board finds that:

The revenues to be collected pursuant to the proposed fee regulation are reasonably necessary to recover start-up costs and the reasonable anticipated costs for fiscal year 1988-89 which will be incurred by the Board, the districts, and the Department of Health Services to implement and administer the Act's provisions, as required by Health and Safety Code Section 44380(a);

The proposed fee regulation is based on criteria pollutant emissions in the absence of a statewide air toxics inventory, and after such an inventory is available, the Board staff will propose changes to the regulation so that fees are assessed on the basis of emission of toxic air releases;

The proposed regulation bases fees on the most recently approved ARB criteria pollutant emissions inventory data for total organic gases, particulate matter, nitrogen oxides and sulfur oxides and on program cost information provided by or estimated for the districts;

The list of substances proposed for adoption accurately reflects those required to be compiled and maintained by the ARB pursuant to Health and Safety Code Section 44321;

The economic impact of the fee regulation on the affected facilities will not be significant;

This regulatory action will not have a significant adverse impact on the environment and may indirectly benefit air quality by stimulating a reduction in emissions of both toxic and criteria pollutants; and

Adoption of this regulation as an emergency measure is required by Health and Safety Code Section 44383 and is necessary for the immediate preservation of the public health, safety, and welfare in order to permit the immediate initiation and funding of state and district activities to implement the Act, including development of guidelines for preparation of air toxics inventory plans, amendment of district rules to require compliance with the Act as a permit condition for new and modified sources, development of a data management system, maintenance of a complete and accurate list of toxic substances, development of health risk assessment and public notification guidelines, and the provision of technical assistance to industry and the public, all of which will increase public awareness of the amounts, types, and health impacts of routine toxic releases into the air by specific sources of hazardous emissions.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves Sections 90700-90704, Title 17, California Code of Regulations, as set forth in Attachment A hereto.


BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt Sections 90700-90704, Title 17, California Code of Regulations, after making them available to the public for a period of 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the regulations referenced above as emergency regulations in accordance with the procedures set forth in Government Code Section 11346.1, and to complete the procedures set forth in Government Code Sections 11346.4 through 11346.8 to formally adopt the regulations as expeditiously as practicable;

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to forward the adopted regulations to the districts for appropriate action.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to report annually to the Board on progress in implementing AB 2588 and to propose appropriate amendments to the fee schedule.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-42, as adopted by  
the Air Resources Board.



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Cary Allison, Board Secretary

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider the Adoption of a Fee  
Schedule and List of Substances Pursuant to the Air  
Toxics "Hot Spots" Information and Assessment Act of  
1987.

Agenda Item No.: 88-9-3

Public Hearing Date: July 14, 1988

Issuing Authority: Air Resources Board

Comments: No comments were received identifying any significant  
environmental issues pertaining to this item. The  
staff report identified no adverse environmental  
effects.

Response: N/A

CERTIFIED:

Cary Allison  
Board Secretary

Date:

11/10/88

State of California  
AIR RESOURCES BOARD

Resolution 88-43

August 11, 1988

Agenda Item No.: 88-11-2

WHEREAS, the Air Resources Board ("Board") and the federal Environmental Protection Agency have established ambient air quality standards for ozone and particulate matter, and the Board has established standards for visibility reducing particles, and these standards are frequently exceeded in several of the state's air basins;

WHEREAS, Health and Safety Code Sections 39003, 39500, 39602, and 41500 authorize the Board to coordinate, encourage, and review efforts to attain and maintain state and national ambient air quality standards;

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Board to act as necessary to execute the powers and duties granted to and imposed upon the Board and to assist the local air pollution control and air quality management districts;

WHEREAS, the statewide Technical Review Group for Suggested Control Measure Development (TRG) has approved a proposed Suggested Control Measure for the Control of Organic Compound Emissions from Sumps Used in Oil Production Operations (the "Suggested Control Measure") and has recommended that the Suggested Control Measure be forwarded to the Board for consideration;

WHEREAS, at least one district is considering the control of organic compound emissions from sumps used in oil production operations as an air quality improvement strategy;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as proposed if feasible alternatives or mitigation measures are available;

WHEREAS, the Board has held a duly noticed public meeting to consider approval of the Suggested Control Measure and has heard and considered the comments presented by representatives of the Board, TRG, districts, affected industries, and other interested persons and agencies; and

WHEREAS, the Board finds that:

Emissions of organic compounds from sumps used in oil production operations contribute to ambient concentrations of ozone, sub-10 micron particulate matter (PM<sub>10</sub>), and visibility reducing particles, and that those concentrations frequently exceed the ambient air quality standards in several air basins;

It is technically feasible and economically reasonable to reduce organic compound emissions from sumps used in oil production operations;

Implementation of the Suggested Control Measure would reduce organic compound emissions from sumps used in oil production operations by approximately 25 to 75 percent with an average cost-effectiveness of about \$0.70 to \$4.00 per pound of organic compound removed; and

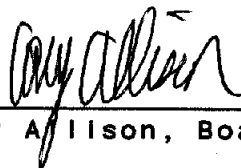
No significant adverse environmental impacts associated with the proposed Suggested Control Measure have been identified and no potentially significant adverse environmental effects are likely to result from the adoption and implementation of the Suggested Control Measure;

NOW, THEREFORE, BE IT RESOLVED that the Board approves the Suggested Control Measure for the Control of Organic Compound Emissions from Sumps Used in Oil Production Operations, as set forth in Attachment A to this resolution and as amended by the Board to include Section E(6) regarding the use of alternative test methods.

BE IT FURTHER RESOLVED that the Executive Officer is directed to forward the Suggested Control Measure to the air pollution control and air quality management districts for consideration and adoption in regulatory form to the extent necessary to provide for the attainment and maintenance of the ambient air quality standards.

BE IT FURTHER RESOLVED that the Executive Officer is directed to provide assistance to any district requesting assistance in adopting, interpreting, or implementing the Suggested Control Measure.

I hereby certify that the above is a true and correct copy of Resolution 88-43, as adopted by the Air Resources Board.



Cary Allison, Board Secretary

## ATTACHMENT A

### SUGGESTED CONTROL MEASURE

#### A. Applicability

- (1) This rule is applicable to primary, secondary, or tertiary sumps located at facilities where crude petroleum is produced, gathered, separated, processed, or stored. This rule is not applicable to sumps located at petroleum refineries.
- (2) The owner or operator of a sump shall comply with the requirements of this rule no later than (two years from date of adoption).

#### B. Definitions

For the purpose of this rule, the following definitions apply:

- (1) Fixed Roof Cover means any cover that is made of a metallic, polymer, or other material and which is not in contact with a liquid surface, but is placed over and completely encloses the liquid surface.
- (2) Floating Cover means any cover that is made of a metallic, polymer, or other material and which floats on a liquid surface and prevents evaporation of the liquid under the cover into the atmosphere. A floating cover can be a flexible floating cover or a rigid floating cover.



- (a) Flexible Floating Cover means any floating cover that is made of flexible polymer material and that is in contact with the entire liquid surface it covers except for the small area of liquid surface under a hatch(es).
- (b) Rigid Floating Cover means any floating cover that is inflexible and that is in contact with over 95% of the liquid surface it covers, except for the small area of liquid surface under a hatch(es) and around the perimeter of the liquid body between the cover and the sump walls.
- (3) Oil production sump (Sump) means a lined or unlined surface impoundment or excavated depression in the ground that, during normal operations, is in continuous use for separating crude oil, water, and solids in oil production operations.
- (4) Organic Compound means any compound containing at least one atom of carbon except methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, 1,1,1-trichloroethane, methylene chloride, trifluoromethane (FC-23), chlorodifluoromethane (CFC-22), trichlorotrifluoroethane (CFC-113), dichlorodifluoromethane (CFC-12), trichlorofluoromethane (CFC-11), dichlorotetrafluoroethane (CFC-114), and chloropentafluoroethane (CFC-115).

- (5) Primary Sump or First Stage Production Sump means any sump which is in continuous use and receives a stream of crude oil and produced water directly from oil production wells or field gathering systems.
- (6) Secondary Sump or Second Stage Production Sump means any sump which is in continuous use and receives a waste water stream from one or more first stage separators such as a primary or first stage production sump, a free water knock out (FWKO) device, or a wash tank as well as Intermittent or emergency streams.
- (7) Tertiary Sump or Third Stage Production Sump means any sump which is in continuous use and receives a waste water stream from second stage or subsequent separation processes upstream of the sump, and has a very small amount of oil present.
- (8) Small producer means a person, including any business entity, that produced an average of \_\_\_\_<sup>\*/</sup> barrels per day or less of crude oil over the 90 day period immediately preceeding (date of adoption of this rule).

C. Exemptions

The owner or operator of a secondary or tertiary sump is exempt from the requirements of this rule if:

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<sup>\*/</sup> To be determined by each district depending on the needs of the district. Districts may wish to consider criteria other than oil production rate in identifying which business entities should be exempt as small producers.

(1) The weighted average concentration of organic compounds (or volatile organic compounds) in liquid samples taken from within 10 feet of all sump inlet pipes, is less than \_\_\_\_\_, or the average amount of organic compound emissions from the sump surface is less than \_\_\_\_\_ lbs/sq.ft.-day.<sup>\*\*/</sup>

(2) The sump has a liquid surface area less than \_\_\_\_\_<sup>\*\*\*/</sup> square feet and is owned and operated by a small producer.

D. Requirements

(1) No person shall place, store, or hold in any primary, secondary, or tertiary sump, any crude petroleum unless the sump is designed and equipped with one of the following organic compound emission control devices, properly installed, properly maintained, and in good operating order:

(a) a flexible floating cover

(b) a rigid floating cover equipped with a closure device between the sump wall and the cover edge. The closure

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<sup>\*\*/</sup> Districts would have the option of exempting sumps based on (1) the concentration of total organic compounds in sump fluid, (2) the concentration in sump fluid of those organic compounds that, because of their relatively high volatility ( $C_{14}$  or less), contribute most to sump emissions, or (3) the amount of emissions from the sump. Districts would be free to use other criteria to identify the sumps, if any, that would be exempted

<sup>\*\*\*/</sup> To be determined by each district depending on the needs of the district. Districts would be free to use criteria other than the one cited here to identify the sumps, if any, that would be exempt.

device shall operate such that the gap between the sump wall and the cover shall not exceed one (1) inch at any location around the sump perimeter.

(c) a fixed roof cover.

(d) any alternative type of cover which, by itself or in conjunction with other organic compound emission control devices, controls organic compound emissions with an effectiveness equivalent to a cover which meets the requirement in this rule for a flexible floating cover or that reduces organic compound emissions by at least 90 percent by weight. The owner or operator of a sump shall, prior to installation, demonstrate to the satisfaction of the (Executive or Air Pollution Control) Officer of the District that the alternative type of cover and other control devices proposed for installation are capable of controlling organic compound emissions with an effectiveness equivalent to a cover which meets the requirements in this rule for a flexible floating cover or that they are capable of reducing emissions by at least 90 percent by weight.

(2) A floating, fixed roof, or other cover used to achieve compliance with section D(1) shall be constructed and maintained such as to prevent the escape into the atmosphere of organic compounds through openings other than

pressure/vacuum vents. The cover and its appurtenances shall be maintained such that:

- (a) The cover material is impermeable to organic compounds,
  - (b) There are no holes, tears, or openings in the cover material which allow the emission of organic compounds into the atmosphere,
  - (c) Any emergency drain is provided with a slotted membrane fabric cover, or equivalent, that covers at least nine-tenths of the area of the opening,
  - (d) All hatches are maintained closed and gap-free, except during times of actual maintenance, inspection, or repair,
  - (e) The perimeter of any sump cover except for a rigid floating cover forms a gap-free seal with the foundation to which it is attached, and
  - (f) All pressure/vacuum relief valves are set to within 10 percent of the maximum safe working pressure of the cover.
- (3) If a sump is replaced by a tank, that tank shall comply with the District's regulation for the control of emissions from petroleum storage tanks. At a minimum, the tank shall be maintained leak free and shall be fitted with a pressure/vacuum relief valve that is set to within 10 percent of the maximum allowable working pressure of the tank.

E. Testing and Administration

- (1) The owner or operator of a sump who wishes to install on a sump an alternative type of cover or other emission control device pursuant to section D(1)(d) of this rule shall, prior to installation or use, demonstrate equivalence to the (Executive or Air Pollution Control) Officer of the District by actual emissions tests, engineering evaluation, or other means acceptable to the Officer. The tests or evaluation shall take into consideration the emissions from the uncontrolled sump as calculated using the surface area of that sump and appropriate emission factors or as determined by actual emissions tests.
- (2) Any person claiming an exemption from this rule pursuant to section C shall justify the exemption status every 12 months. Each justification shall be submitted to the (Executive or Air Pollution Control) Officer, in writing, for approval and must include the results of organic compound concentration or emission tests conducted by an independent test laboratory or source test organization.
- (3) The testing of the concentrations of total organic compounds in the streams that flow into a sump shall be performed using EPA method 413.2, "spectrophotometric, Infrared", or EPA method 418.1, "spectrophotometric, Infrared". Testing to determine the concentration of volatile organic compounds in sump fluid shall be performed

using EPA method 8240, "Gas Chromatographic/Mass Spectrometric Method for Volatile Organics".

- (4) The testing of organic compound emissions from a sump shall be performed using the Air Resources Board flux box method developed by the Air Resources Board, or equivalent method approved in writing by the (Executive or Air Pollution Control) Officer of the District.
- (5) Records of all tests conducted pursuant to this section shall be maintained by the operator for a period of at least two years and shall be made available to the (Executive or Air Pollution Control) Officer of the District upon request.
- (6) A method other than specified in Section E(3), above, or a modified test method may be used if prior approval is obtained from the Executive (or Air Pollution Control) Officer of the district. In order to secure the Officer's approval, the proponent is responsible for demonstrating to the Officer's satisfaction that the alternative method is equivalent to the adopted method or that the modification to the method does not alter the results obtained by the adopted method.

# Resolution

## 88-44

### Missing Resolution



State of California  
AIR RESOURCES BOARD

Resolution 88-45

July 15, 1988

Agenda Item No.: 88-10-1

WHEREAS, on January 25, 1985, pursuant to Section 39662 of the Health and Safety Code, the Air Resources Board ("Board") identified benzene as a toxic air contaminant for which there is not sufficient available scientific evidence to support the identification of a threshold exposure level below which no significant adverse health effects are anticipated (see Title 17, California Code of Regulations, Section 93000);

WHEREAS, on July 9, 1987 the Board considered the "Proposed Airborne Toxic Control Measure for Emissions of Benzene from Retail Service Stations" and on October 8 approved a revised measure to reduce benzene emissions;

WHEREAS, on July 9, 1987 the Board directed the staff to assess the benefits and cost of using hold-open latches on gasoline dispensing nozzles as a supplement to vapor recovery systems at gasoline service stations to reduce personal exposure to benzene during vehicle refueling;

WHEREAS, the Board staff has prepared an informational report titled "Hold-Open Latches on Gasoline Dispensing Nozzles and Personal Exposure to Benzene During Refueling" (staff report) which includes: estimates of benzene emissions and personal exposure to benzene during vehicle refueling, and the cancer risk and cancer incidence reductions associated with using hold-open latches during vehicle refueling at retail service stations that have vapor recovery; a discussion of the fire safety issues associated with the use of hold-open latches at gasoline service stations; estimates of current hold-open latch availability and use by the public; and cost estimates of making hold-open latches and instructional signs available at all service stations statewide;

WHEREAS, in consideration of the staff report and the written comments and public testimony it has received, the Board finds that:

The added lifetime cancer risk and cancer incidence from exposure to benzene emissions from retail service stations during the refueling of motor vehicles contributes to the statewide and local incidence of cancer and to the overall cancer risk;

The increased use of hold-open latches at gasoline service stations in conjunction with vapor recovery refueling controls would reduce further personal exposure to benzene, and the resulting cancer risk and cancer incidence, by allowing refuelers to move away from the vehicle fill pipe during refueling;

The hold-open latches do not reduce benzene emissions, yet the latches are an appropriate and inexpensive supplement to Phase II vapor recovery systems;

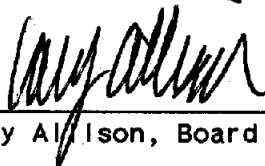
The air pollution control districts and air quality management districts (districts) should require the installation of hold-open latches to further reduce exposure to benzene; and

WHEREAS, the Board has determined, pursuant to the requirements of the California Environmental Quality Act and Board regulations, that this action will have no significant adverse impact on the environment.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby directs the Executive Officer to transmit the staff report to the districts, with the Board's recommendation that the districts require that hold-open latches be made available at gasoline service stations as a supplement to vapor recovery systems and encourage greater use of the latches through public education, while taking into account the recommendations of the local Fire Marshals.

BE IT FURTHER RESOLVED that the Executive Officer shall request that the districts report to him by July, 1989, on their progress towards implementing the Board's recommendations regarding hold-open latches, and that the Executive Officer shall thereafter provide the Board with a brief report on the status of implementation.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-45, as adopted by  
the Air Resources Board.



Cary Allison, Board Secretary

# Resolution

## 88-46

### Missing Resolution

ITEM NO.: 88-11-3(b)  
DATE: August 11, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No.1606-140 entitled  
"Data Analysis for the Southern California Air  
Quality Study - Phase I"

**RECOMMENDATION:** Adopt Resolution 88-47 approving Proposal No.  
1606-140 for an amount not to exceed \$124,170.

**SUMMARY:** This project provides for archiving, validation  
and management of the aerometric data base  
collected during the Southern California Air  
Quality Study (SCAQS). The contractor will  
perform statistical analyses of the data base in  
order to identify incorrect data, communicate  
with individual investigators to correct the  
data, and update the data base.

The principal investigator is John Collins, and  
the contractor is ERT, Inc. ERT has performed  
successfully as the data manager and quality  
assurance contractor for the Southern California  
Air Quality Study. This continuation of ERT's  
efforts will provide to the ARB and to other  
SCAQS sponsors a reasonably complete and  
validated data base for all intensive study  
days.

The attached table summarizes the status of data  
sets to be included. These data will be used by  
ARB and others to conduct tests and validations  
of existing photochemical models and to develop  
improved models for ozone, PM<sub>10</sub>, visibility,  
toxics and acidic air pollutants.

SCAQS Data Status - July 20, 1988

Group	PI	Date Due	Received	Measurement
AIHL	Appel		2/10/88	NO, NOx: Teko 14b w/CO3 denuder
AIHL	John	9/88		Berner Impactor
ARB	Bennett		2/18/88	Pt. Mugu Upper Air Met
ARB	Bennett	8/88		IMU Upper Air Met
ARB	Kowalski		6/30/88	NO, NOx: Monitor Labs 8840
AV	Moon		6/02/88	Aerosol Sizing
AV	Chan	8/88		SCE Van
AV	Ettenheim	9/88		Doppler Sounder
Bios	Rasmussen	--		HC Canister, Toxics
CIT	Hoffmann	8/88		Cloud/Fog Water Chemistry
CIT	Shair	9/88		SF6 Tracer
CMU	Davidson	8/88		Dry Deposition to Surfaces
DGA	Grosjean	12/88		PAN, Organic Acids, C14
BMSI	Countess	8/88		SCAQS Sampler Data
BMSI	Lev-On	8/88		H2O2
EPA	Kellogg	11/88		XRF
EPA	Knapp	11/88		HC Speciation, HNO3
EPA	Lonneman	11/88		PAN
EPA	McElroy	10/88		Lidar
ERT	Fung	9/88		Carbon, HNO3
ERT	Wright	10/88		Carbonyls
Ford	Adams	8/88		Spectraphone
GGC	Gordon	11/88		Radio Carbon
GGC	Kaplan	11/88		Alcohols
GM	Wolff	8/88		Continuous Analyzer
GM	Kelly	10/88		Smog Chamber
IIT	Noll		4/28/88	Deposition Plates
LBL	Hansen		7/01/88	Aethalometer
OGC	Turpin	--		Continuous Sulfate
OME	Bardswick	--		APIOS Deposition
Radian	Oliver		11/01/88	Day-specific Emissions
RP	Richmond		6/01/88	Photography
SCAQMD	Eden		4/08/88	PM10
SCAQMD	Bope		3/11/88	Continuous Routine AQ
SCE-IWI	Zeldin		6/01/88	Airport Met, Description (Summer)
SCE-IWI	Zeldin	9/88		Airport Met, Description (Fall)
STI	Richards		2/17/88	Radiance Difference
STI	Anderson	8/88		Aircraft
SVRI	Ingalls	10/88		Tunnel Study
TBS-ARB	Lehrman		6/01/88	Upper Air Met (Summer)
TBS-ARB	Lehrman	8/88		Upper Air Met (Fall)
TBS-ARB	Lehrman		7/01/88	Surface Met
TBS-SCE	Lehrman		6/01/88	Upper Air Met (All)

SCAQs Data Status - July 20, 1988  
(continued)

Group	PI	Date Due	Received	Measurement
TT-SCE	Marsh	9/88		Perfluorocarbon Tracer
UCD	Cahill	8/88		DRUM
UCLA	Allen	9/88		Particle Size, FTIR
UCLA	Main	9/88		LPI Dichot
UCR	Winer	8/88		DOAS NO3, NO2 (Summer)
UCR	Winer	3/89		DOAS NO3, NO2 (Fall)
UCR	Atkinson	not funded		HiVol w/PUF
UD	Stedman		5/01/88	PAN, HNO3, Rad
UI	Rood	7/88		Nephelometer, Temp, RH
UM	McMurry	11/88		MOUDI-Carbon
UNI	Mackay		3/19/88	HCHO, H2O2, HNO3
UV	Hitzenberger		6/20/88	Path Radiance
UW	Hegg		6/01/88	Aircraft
VCAPCD	Shipp	8/88		Surface Met

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-47  
August 11, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1606-140, entitled "Data Analysis for the Southern California Air Quality Study - Phase I," has been submitted by ERT, Inc.; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

Proposal Number 1606-140, entitled "Data Analysis for the Southern California Air Quality Study - Phase I," submitted by ERT, Inc. for a total amount not to exceed \$124,170.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1606-140, entitled "Data Analysis for the Southern California Air Quality Study - Phase I," submitted by ERT, Inc. for a total amount not to exceed \$124,170.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$124,170.

I hereby certify that the above is a true and correct copy of Resolution 88-47, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary

## BUDGET SUMMARY

ERT, Inc.

"Data Analysis for the Southern California  
Air Quality Study -  
Phase I"

### BUDGET ITEMS:

Salaries	\$28,507	
Benefits	33,924	
Travel	620	
Consultants*	25,000	
Other Costs**	<u>27,103</u>	
<b>TOTAL, Direct Cost</b>		<b>\$115,154</b>
<b>TOTAL, Indirect Cost</b>		<b><u>9,016</u></b>
<b>TOTAL PROJECT COST</b>		<b>\$124,170</b>

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\* Consultant funds will be used to help ensure that all data are contained in the archive and reported in a consistent manner, and to help oversee validation efforts.

** Computer Usage	\$ 7,500
Telephone	500
Report Cost	500
G & A (26%)	18,603



**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-48  
August 11, 1988**

**WHEREAS, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and**

**WHEREAS, a solicited research proposal, Number 1593-138, entitled "Development of Species Profiles for Selected Organic Emission Sources," has been submitted by the California Polytechnic State University Foundation; and**

**WHEREAS, the Research Division staff has reviewed and recommended this proposal for approval; and**

**WHEREAS, the Research Screening Committee has reviewed and recommends for funding:**


**Proposal Number 1593-138, entitled "Development of Species Profiles for Selected Organic Emission Sources," submitted by the California Polytechnic State University Foundation, for a total amount not to exceed \$140,161.**

**NOW, THEREFORE, BE IT RESOLVED, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:**

**Proposal Number 1593-138, entitled "Development of Species Profiles for Selected Organic Emission Sources," submitted by the California Polytechnic State University Foundation, for a total amount not to exceed \$140,161.**

**BE IT FURTHER RESOLVED, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$140,161.**

I hereby certify that the above is a true and correct copy of Resolution 88-48, as adopted by the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary

**ITEM NO.:** 88-11-3(b)

**DATE:** August 11, 1988

**State of California**

**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1593-138 entitled "Development of Species Profiles for Selected Organic Emission Sources"

**RECOMMENDATION:** Adopt Resolution 88-48 approving Proposal No. 1593-138 for an amount not to exceed \$149,962.

**SUMMARY:** The purpose of this study is to develop source profiles for emissions of organic compounds from selected source categories that contribute to violation of state and federal ambient air quality standards for ozone.

Fugitive hydrocarbon emissions from oil production facilities and exhaust hydrocarbons from specified types of equipment using internal combustion engines, including tractors, heavy-duty equipment, lawnmowers and other utility engines, would be sampled and analyzed. Hydrocarbon speciation would be performed and identities of major components would be verified. Analytical results would be reported in a format consistent with the Organic Gas Emission Profiles of the ARB's emission inventory. A total of approximately 100 samples would be collected and analyzed.

Information from this study will be used to improve the accuracy of emission inventories for organic gases and to improve modeling analyses used for the development of ozone control strategies. The contractor for this study would be the California Polytechnic State University, San Luis Obispo, and the principal investigator would be Dr. Albert Censullo. The analytical laboratory work would be subcontracted to Environmental Analytical Services, Inc., of San Luis Obispo.

## BUDGET SUMMARY

California Polytechnic State University,  
San Luis Obispo

"Development of Species Profiles for  
Selected Organic Emission Sources"

### BUDGET ITEMS:

Salaries	\$54,465	
Benefits	11,968	
Travel	9,900	
Consultants	1,710	
Other Costs*	<u>46,925</u>	
<b>TOTAL, Direct Cost</b>		<b>\$124,968</b>
<b>TOTAL, Indirect Cost</b>		<b><u>24,994</u></b>
<b>TOTAL PROJECT COST</b>		<b><u>\$149,962</u></b>

\*Subcontract with Environmental Analytical Services, Inc., for chemical analyses of approximately 100 gas samples for speciated hydrocarbons and aldehydes.

**State of California**

**AIR RESOURCES BOARD**

**Resolution 88-49**

**August 11, 1988**

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1610-140, entitled "P-TEAM: Chemical Characterization of Indoor Air Particulates," has been submitted by the Research Triangle Institute; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:


Proposal Number 1610-140, entitled "P-TEAM: Chemical Characterization of Indoor Air Particulates," submitted by the Research Triangle Institute, for a total amount not to exceed \$67,536.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1610-140, entitled "P-TEAM: Chemical Characterization of Indoor Air Particulates," submitted by the Research Triangle Institute, for a total amount not to exceed \$67,536.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$67,536.

I hereby certify that the above is a true and correct copy of Resolution 88-49, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

ITEM NO.: 88-11-3(b)  
DATE: August 11, 1988

**State of California**  
**AIR RESOURCES BOARD**

**ITEM:** Research Proposal No. 1610-140 entitled  
"P-TEAM: Chemical Characterization of Indoor  
Air Particulates"

**RECOMMENDATION:** Adopt Resolution 88-49 approving Proposal No.  
1610-140 for an amount not to exceed \$67,536.

**SUMMARY:** This proposal is submitted to provide for ARB  
participation in the initial pilot stages of a  
large field study to determine the indoor,  
outdoor and personal exposures of people to  
particulates and semivolatile organic compounds.  
The U.S. Environmental Protection Agency (EPA)  
is providing the majority of the funds needed to  
sponsor this work. EPA's focus is on obtaining  
gravimetric data on PM<sub>2.5</sub> and PM<sub>10</sub>. The  
requested funds would add specific extensions to  
the initial pilot study, primarily to evaluate  
methods for measuring exposures to organic  
compounds.

The results of this pilot study will be used to  
plan a much larger field study, where  
approximately 200 to 250 residences will be  
studied. At the end of this pilot study, the  
Research Screening Committee will assess and  
recommend whether and/or how ARB participation  
should be continued in the larger study. ARB

participation in this pilot study will ensure that it will be performed in California. It is likely that the larger study will be performed at the same site, thus effectively making the overall study (which would also be funded largely by EPA) serve the information needs of the Board.

The information generated by this specific proposal will have limited initial application to the activities of the Board's indoor and toxics programs. The major benefit will be to provide crucial information to guide the planning of future field work. Larger scale studies based on this work will be of great utility to the Board's indoor and toxics programs as well as our PM<sub>10</sub> regulatory efforts because it will provide indoor and outdoor exposure data on a large number of substances.

The contractor will be the Research Triangle Institute and the principal investigator will be Dr. E.D. Pellizzari.

# B U D G E T   S U M M A R Y

## RESEARCH TRIANGLE INSTITUTE

"P-TEAM: Chemical Characterization of Indoor Air Particulates"

### BUDGET ITEMS:

Salaries	\$14,032
Benefits	4,911
Travel	4,050
Sub Contractors	10,000
Other Costs*	<u>6,580</u>

TOTAL, Direct Cost	\$39,573
TOTAL, Indirect Cost	<u>27,963</u>

**TOTAL PROJECT COST**      **\$67,536**

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*Supplies	\$4,580
Computer Costs	500
Reports and	1,500
Communication	

State of California  
AIR RESOURCES BOARD

Resolution 88-50

November 18, 1988

Agenda Item No.: 88-12-1

Agenda Item No.: 88-15-1

WHEREAS, Sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the "Board") to adopt standards, rules, and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, Sections 43013, 43101, and 43104 of the Health and Safety Code authorize the Board to adopt emission standards and test procedures to control air pollution caused by motor vehicles;

WHEREAS, Section 43100 of the Health and Safety Code authorizes the Board to certify new motor vehicles, and Section 43102 provides that no new motor vehicle shall be certified unless it meets the emission standards and test procedures adopted by the Board;

WHEREAS, the certification procedures require a demonstration that the vehicle complies with the applicable emission standards throughout the vehicle's useful life;

WHEREAS, Section 43106 of the Health and Safety Code requires that each new motor vehicle required to meet the emissions standards established pursuant to Section 43101 shall be, in all material respects, substantially the same in construction as the test motor vehicle certified by the Board;

WHEREAS, Section 43105 of the Health and Safety Code authorizes the Board, pursuant to regulations adopted by the Board, to require a manufacturer to recall vehicles which violate applicable emission standards or test procedures;

WHEREAS, the Board in 1982 established (and has since periodically amended) an in-use vehicle recall program by adopting procedures for emission-related defect reporting, in-use vehicle recall, and in-use vehicle enforcement testing, as set forth in Sections 2111, 2112 and 2113, Title 13, California Code of Regulations, and in incorporated documents;

WHEREAS, the staff has proposed amendments to Sections 2111 and 2112 of Title 13, California Code of Regulations, and the documents incorporated by reference therein, and further proposed the repeal of Section 2113 of Title 13, California Code of Regulations, and the adoption of a new Section 2113 and document incorporated by reference therein in order to improve the effectiveness of the in-use recall program;



WHEREAS, the amendments proposed by staff would reorganize the existing defect reporting and in-use recall procedures into three incorporated documents: "California Procedures for Reporting Failures of Emission-Related Components for 1982 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles and Engines, and Motorcycles"; "California In-Use Vehicle Emission-Related Recall Procedures for 1982 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles and Engines, and Motorcycles"; and "California In-Use Vehicle Enforcement Test Procedures for 1982 and Subsequent Model-Year Passenger Cars, Light-Duty Trucks, Medium-Duty Vehicles, Heavy-Duty Vehicles and Engines, and Motorcycles";

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available to eliminate or reduce such impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;

WHEREAS, the Board finds that:

1. Failure of in-use vehicles to comply with applicable emission standards during their useful lives results in a substantial increase in emissions;
2. Early identification of failing emission-related components, timely and efficient initiation of recalls, and timely completion of repairs would improve the effectiveness of the recall program and result in greater emission reductions from in-use vehicles;
3. Reclassification of recalls into three categories (voluntary, influenced, and ordered) would enable the ARB to respond to various recall situations with appropriate approval procedures and implementation requirements and would encourage manufacturers to initiate voluntary recalls;
4. Because of the low response of owners to recall notices (i.e. low "capture rate"), the effectiveness of recall repairs or the number of vehicles captured must be increased at the option of the manufacturers, pending the adoption of a statewide program conditioning the annual renewal of registration of a recalled vehicle on proof that the necessary repairs have been performed;
5. Provision should be made for the eventual adoption and implementation of the conditional annual registration program referred to above by requiring the manufacturers to provide specified information once such a program is adopted;

6. A tracking mechanism based on emission warranty claim records or equivalent process is necessary to facilitate the early identification of failing emission-related components and engine families that fail emission standards;
7. A requirement that manufacturers submit field information reports and emissions information reports with detailed information about component failures when warranty claims or component failures reach a specified percentage, in lieu of a voluntary recall, would facilitate evaluation of the in-use emission problems and assessment of the need for further investigation or recall;
8. It is appropriate to base a recall on the failure of a specific emission-related component unless the manufacturer can demonstrate that the failure will not result in exceedance of the standards in a substantial percentage of vehicles having the failure over the vehicles' useful lives;
9. When a recall is to be performed, timely submission of information is necessary to allow the staff to evaluate whether a recall plan is adequate to correct the nonconformity;
10. The recall and reporting procedures should be applicable to specified federal vehicles certified for sale in California (AB 965 vehicles);
11. Changes should be made to clarify the requirements and streamline the defect reporting and recall process;
12. This regulatory action will have a significant beneficial impact on air quality by reducing manufacturer-related excess emissions from in-use vehicles.

WHEREAS, in response to comments of the industry and the public and on the basis of further analysis staff proposed conceptual changes to the regulations which they originally proposed;

WHEREAS, at a public hearing on September 8, 1988, the Board considered the original staff proposal, the conceptual changes which the staff proposed to that proposal, and the comments and testimony of the manufacturers and other interested parties and expressed approval of the amendments to Sections 2111, 2112, and 2113 of Title 13 of the California Code of Regulations and the documents incorporated therein, with the changes which were orally discussed on the record;

WHEREAS, the Board continued the hearing and directed the Executive Officer, in cooperation with the manufacturers, to draft appropriate language embodying the changes which the Board approved to the original staff proposal and to present the regulations to the Board for further consideration;

WHEREAS, the Board has considered the regulations and incorporated documents as amended by staff, the supplemental staff report, and the comments and testimony presented by interested persons and the staff;

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the amendments to the regulations specified in 13 CCR Sections 2111-2113 and the documents incorporated therein, as set forth in Attachments A through D, and directs the Executive Officer to adopt the amendments after making them available to the public for a period of 15 days; provided the Executive Officer shall consider such written comments as may be submitted during this period and shall make such modifications as may be appropriate in light of the comments received.

BE IT FURTHER RESOLVED that the Board hereby determines that the amendments adopted herein will not cause the California emission standards, in the aggregate, to be less protective of public health and welfare than applicable federal standards, and will not cause the California requirements to be inconsistent with Section 202(a) of the Clean Air Act, and raise no new issues affecting previous waiver determinations of the Administrator of the Environmental Protection Agency pursuant to Section 209(b) of the Clean Air Act.

BE IT FURTHER RESOLVED that the Executive Officer shall, upon their adoption, forward the amendments adopted herein to the Environmental Protection Agency with a request for a confirmation that the amendments are within the scope of an existing waiver of federal preemption pursuant to Section 209(b) of the Clean Air Act, if such action is required by the Clean Air Act.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to report back to the Board on the progress of the recall program, and to inform the Board of any problems encountered in its implementations within one year of the effective date of these regulations.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-50, as adopted by  
the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary

State of California  
AIR RESOURCES BOARD

Resolution 88-51

November 18, 1988

Agenda Item No. 88-15-2

WHEREAS, the Air Resources Board (the "Board"), through its Executive Officer, issues various licenses and certifications, including licenses for vehicle emission laboratories and certifications for air pollution control equipment, motor vehicles and motor vehicle engines;

WHEREAS, the Executive Officer may also revoke or suspend such licenses and certifications and may order a recall of vehicles and engines;

WHEREAS, when the Executive Officer acts to revoke or suspend a license or order a recall, the party against whom the action is taken often has a right to a hearing to contest the Executive Officer's decision;

WHEREAS, the Board does not have any generally applicable procedures to govern the conduct of these adjudicatory hearings;

WHEREAS, the Board is authorized by Health and Safety Code Section 39601 to adopt regulations necessary for the proper execution of the powers and duties imposed upon the Board;

WHEREAS, Board staff conducted a workshop on adjudicatory hearing regulations and has developed proposed adjudicatory hearing procedures in consideration of the comments received;

WHEREAS, Board staff has proposed the adoption of adjudicatory hearing regulations, which include provisions specifying the applicability of the procedures, the contents of a petition for a hearing, the responsibilities of the parties to the hearing, the conduct of the hearing, the Board's decision, and the process for requesting reconsideration by the Board;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as originally proposed if feasible alternatives or mitigation measures are available;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code;


WHEREAS, the Board finds that the proposed regulations contain procedures which adequately address the interest of parties affected by Board actions and which are appropriate to assist the Board in the conduct of adjudicatory hearings; and

WHEREAS, the Board has determined, pursuant to the requirements of the California Environmental Quality Act and Board regulations, that this regulatory action will have no significant adverse impact on the environment.

NOW THEREFORE BE IT RESOLVED, that the Board approves the proposed regulations, Sections 60040-60053, Title 17, California Code of Regulations, and amends Section 2048, Title 13, California Code of Regulations and the incorporated procedures, as set forth in Attachment A.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt Sections 60040-60053, Title 17, California Code of Regulations and amends Section 2048, Title 13, California Code of Regulations and the incorporated procedures, as set forth in Attachment A, after making them available to the public for a period of 15 days, provided that the Executive Officer shall consider such written comments as may be submitted during this period, shall make modifications as may be appropriate in light of the comments received, and shall present the regulations to the Board for further consideration if he determines that this is warranted.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-51, as adopted by  
the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary

Resolution

88-52

No Resolution

State of California  
AIR RESOURCES BOARD

Resolution 88 - 53

December 8, 1988

Agenda Item No.: 88-16-1

WHEREAS, on September 10, 1987, pursuant to Section 39662 of the Health and Safety Code, the Air Resources Board (the "Board") identified carbon tetrachloride as a toxic air contaminant for which there is not sufficient available scientific evidence to support identification of a threshold exposure level below which no significant adverse health effects are anticipated (See Title 17, California Code of Regulations, Section 93000);

WHEREAS, following identification of carbon tetrachloride as a toxic air contaminant, the staff has prepared the "Examination of the Need for Carbon Tetrachloride Control" (the "staff report") and its Technical Support Document which include: estimates of carbon tetrachloride emissions, exposure, cancer risk and cancer incidence from carbon tetrachloride, and a discussion of the current controls which have recently been applied by industry to reduce emissions of carbon tetrachloride;

WHEREAS, the staff consulted with the districts, affected sources and the interested public during the development of the staff report;

WHEREAS, the Technical Review Group has reviewed and approved the staff report;

WHEREAS, the staff report and relevant comments received during consultation with the districts, affected industry sources, and the public were made available for public review and comment 45 days prior to the public meeting to consider the staff report;

WHEREAS, in consideration of the staff report and the written comments and public testimony it has received, the Board finds that:

The greatest risk posed by carbon tetrachloride to the general population in California is from exposure to the global background concentration, which results in approximately 7 to 29 potential excess lifetime cancer cases per million persons exposed, or an estimated statewide cancer incidence of 190 to 770 potential excess lifetime cases;

The background risk to California's general population cannot be significantly reduced because emissions of carbon tetrachloride from California sources contribute less than 0.02 percent annually to the global background concentration;

The statewide emissions of carbon tetrachloride have been reduced considerably since the compound was identified as a toxic air contaminant, through the voluntary application of best available


control technology by the major emission sources of carbon tetrachloride and from federal restrictions on the use of grain fumigants containing carbon tetrachloride;

The estimated remaining "hot spot" risks for the largest emission source of carbon tetrachloride in California is between 4 and 16 potential excess lifetime cancer cases per million persons exposed. For the 550 people living closest to this source, it is estimated that this exposure will result in less than 0.01 potential excess lifetime cancer cases; and

The overall use and emissions of carbon tetrachloride are expected to decline, both in California and worldwide, especially if chlorofluorocarbons are regulated due to concerns about stratospheric ozone depletion. This will further reduce "hot spot" exposures.

NOW, THEREFORE, BE IT RESOLVED, that the Board hereby approves the staff report titled "Examination of the Need for Carbon Tetrachloride Control" and concurs with the staff's conclusion that further control measures for carbon tetrachloride should not be developed at this time; and that if the staff determines that public exposures to carbon tetrachloride are increasing, or if further evaluation indicates that exposures are greater than currently estimated, the staff shall reassess control options for the specific sources and bring a proposed control measure to the Board.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-53, as adopted by  
the Air Resources Board.

  
\_\_\_\_\_  
Cary Allison, Board Secretary



**State of California**

**AIR RESOURCES BOARD**

Resolution 88-54  
November 17, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, a solicited research proposal, Number 1622-142, entitled "Carbonaceous Species Methods Comparison Study, Interlaboratory Round Robin, Interpretation of Results," has been submitted by Sonoma Technology, Inc.; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

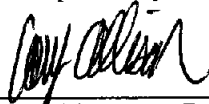
Proposal Number 166-142, entitled "Carbonaceous Species Methods Comparison Study, Interlaboratory Round Robin, Interpretation of Results," submitted by Sonoma Technology, Inc., for a total amount not to exceed \$19,940.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1622-142, entitled "Carbonaceous Species Methods Comparison Study, Interlaboratory Round Robin, Interpretation of Results," submitted by Sonoma Technology, Inc., for a total amount not to exceed \$19,940.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$19,940.

I hereby certify that the above is a true and correct copy of Resolution 88-54, as adopted by the Air Resources Board.



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Cary Allison, Board Secretary

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-55  
November 17, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1612-141, entitled "Effects of Prolonged, Sequential Exposure to Acid Fog and Ozone on Pulmonary Function in Exercising, Normal Subjects," submitted by the University of California, San Francisco; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

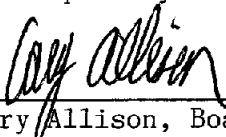
Proposal Number 1612-141, entitled "Effects of Prolonged, Sequential Exposure to Acid Fog and Ozone on Pulmonary Function in Exercising, Normal Subjects," submitted by the University of California, San Francisco, for a total amount not to exceed \$191,549.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1612-141, entitled "Effects of Prolonged, Sequential Exposure to Acid Fog and Ozone on Pulmonary Function in Exercising, Normal Subjects," submitted by the University of California, San Francisco, for a total amount not to exceed \$191,549.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$191,549.

I hereby certify that the above is a true and correct copy of Resolution 88-55, as adopted by the Air Resources Board.

  
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Cary Allison, Board Secretary

**State of California**

**AIR RESOURCES BOARD**

Resolution 88-56  
November 17, 1988

**WHEREAS**, the Air Resources Board has been directed to carry out an effective research program in conjunction with its efforts to combat air pollution, pursuant to Health and Safety Code Sections 39700 through 39705; and

**WHEREAS**, an unsolicited research proposal, Number 1617-142, entitled "Growth, Physiological, and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone" has been submitted by the University of California, Riverside; and

**WHEREAS**, the Research Division staff has reviewed and recommended this proposal for approval; and

**WHEREAS**, the Research Screening Committee has reviewed and recommends for funding:

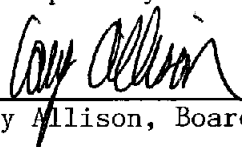
Proposal Number 1617-142, entitled "Growth, Physiological, and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone" submitted by the University of California, Riverside, for a total amount not to exceed \$159,548.

**NOW, THEREFORE, BE IT RESOLVED**, that the Air Resources Board, pursuant to the authority granted by Health and Safety Code Section 39703, hereby accepts the recommendation of the Research Screening Committee and approves the following:

Proposal Number 1617-142, entitled "Growth, Physiological, and Biochemical Responses of Ponderosa Pine (Pinus ponderosa) to Ozone," submitted by the University of California, Riverside, for a total amount not to exceed \$159,548.

**BE IT FURTHER RESOLVED**, that the Executive Officer is hereby authorized to initiate administrative procedures and execute all necessary documents and contracts for the research effort proposed herein in an amount not to exceed \$159,548.

I hereby certify that the above is a true and correct copy of Resolution 88-56, as adopted by the Air Resources Board.



Cary Allison, Board Secretary

State of California  
AIR RESOURCES BOARD

Resolution 88-57

November 17, 1988

Agenda Item: 88-15-3

WHEREAS, Section 39601 of the Health and Safety Code authorizes the Air Resources Board ("Board") to adopt standards, rules, and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, Section 39607(d) of the Health and Safety Code requires the Board to adopt test procedures to measure compliance with its nonvehicular emission standards and those of the air pollution control and air quality management districts ("districts");

WHEREAS, Section 41954 of the Health and Safety Code requires the Board to adopt procedures for determining the compliance of any system designed for the control of gasoline vapor emissions during gasoline marketing operations with performance standards established by the Board;

WHEREAS, in the past the Board has adopted Sections 94100 - 94140, Title 17, California Code of Regulations, which establish 40 test methods for determining whether a nonvehicular (stationary) source is in compliance with the district emission standards;

WHEREAS, the Board has previously adopted the "Certification and Test Procedures for Vapor Recovery Systems at Gasoline Terminals," (the "Certification and Test Procedures") which are incorporated by reference in Section 94003, Title 17, California Code of Regulations;

WHEREAS, the Board's staff has now developed five new test methods for gathering emissions data and determining compliance with district nonvehicular emission standards;

WHEREAS, the new test methods have been thoroughly evaluated by the Board's staff;

WHEREAS, the Board's staff has proposed amendments to the Certification and Test Procedures which would correct an error in the equation used to determine the percent of excess air;

WHEREAS, the California Environmental Quality Act and Board regulations require that no project having significant adverse environmental impacts be adopted as proposed if feasible alternatives or mitigation measures are available which would substantially reduce such adverse impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of the Administrative Procedure Act (Government Code, Title 2, Division 3, Part 1, Chapter 3.5); and

WHEREAS, the Board finds that:

Adoption of the five new test methods set forth in Attachment B, and adoption of the regulations set forth in Attachment A incorporating the test methods, are necessary and appropriate to satisfy the requirements of Section 39607(d) of the Health and Safety Code and may simplify the identification, adoption and enforcement of nonvehicular emission standards;

The amendments to the Certification and Test Procedures and to Title 17, California Code of Regulations, Section 94003 set forth in Attachments A and B are necessary and appropriate.

The actions approved herein will have no significant adverse environmental impacts.

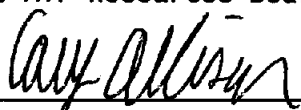
NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves the adoption of Sections 94141 through 94145, Title 17, California Code of Regulations, as set forth in Attachment A hereto.

BE IT FURTHER RESOLVED that the Board hereby approves the five new test methods for determining compliance with district nonvehicular emission standards set forth in Attachment B, with the modifications set forth in Attachment C hereto.

BE IT FURTHER RESOLVED that the Board hereby amends Section 94003, Title 17, California Code of Regulations, as set forth in Attachment A, and amends "Certification and Test Procedures for Gasoline Vapor Recovery System at Gasoline Terminals," as set forth in Attachment B.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to adopt the regulatory changes set forth in Attachment A, B, and C, after making them available to the public for a period of fifteen days, and with such minor modifications as may be appropriate in light of written comments submitted during this period, provided that the Executive Officer shall present the regulations to the Board for further consideration if the Executive Officer determines that this is warranted in light of the written comments received.

I hereby certify that the above is a true and correct Copy of Resolution 88-57, as adopted by the Air Resources Board.

  
Cary Allison, Board Secretary

# Resolution

## 88-58

### Missing Resolution

State of California  
AIR RESOURCES BOARD

Resolution 88-59

November 17, 1988

Agenda Item No.: 88-14-1

WHEREAS, Sections 39600 and 39601 of the Health and Safety Code authorize the Air Resources Board (the Board) to adopt standards, rules and regulations necessary for the proper execution of the powers and duties granted to and imposed upon the Board by law;

WHEREAS, Health and Safety Code Sections 39000, 39001, 43013, 43101 and Western Oil and Gas Ass'n. v. Orange County APCD, 14 Cal. 3d 411 (1975), authorize the Board to regulate the composition of motor vehicle fuels as they affect motor vehicle emissions;

WHEREAS, the Board has established state ambient air quality standards for ozone, suspended particulate matter (PM10), sulfur dioxide, sulfates, visibility-reducing particles, and nitrogen dioxide, and has also established an air quality criterion for sulfate/ozone episodes;

WHEREAS, the Environmental Protection Agency (EPA) has established national ambient air quality standards for ozone, suspended particulate matter (PM10), and nitrogen dioxide;

WHEREAS, Title 13, California Code of Regulations, Section 2252(d) and following prohibits in the South Coast Air Basin and Ventura County ("South Coast Control Area") the sale, or transfer of diesel fuel for use in motor vehicles in the South Coast Control Area where the sulfur content exceeds 500 parts per million (ppm) by weight, with an exemption until January 1, 1989 for specified amounts of diesel fuel produced by small refiners;

WHEREAS, the Board's staff has conducted several workshops regarding the control of the sulfur content of motor vehicle diesel fuel on a statewide basis, and the control of the aromatic hydrocarbon content of motor vehicle diesel fuel;

WHEREAS, the staff has proposed the adoption of two new regulations which would, starting January 1, 1993, (a) limit the permissible sulfur content of motor vehicle diesel fuel to 500 ppm statewide, and (b) limit the aromatic hydrocarbon content of motor vehicle diesel fuel to 10 percent by volume statewide with a 20 percent limit for specified volumes produced by small refiners, allow offsetting higher aromatic content batches with lower aromatic content batches to meet the 10 percent limit, and authorize the Executive Officer to waive the 10 percent limit for a blend of diesel fuel containing an additive or additives where s/he finds the blend will result in no greater emissions than 10 percent aromatics diesel fuel;

WHEREAS, the California Clean Air Act of 1988 (Stats. 1988, ch. 1568; AB 2595; Sher) amends Health and Safety Code 43013, effective January 1, 1989, to provide expressly that the Board may adopt and implement motor vehicle fuel specifications for the control of air contaminants which the Board has found to be necessary, cost-effective, and technologically feasible to carry out the purposes of Division 26 of the Health and Safety Code;

WHEREAS, the California Clean Air Act enacts, effective January 1, 1989, Health and Safety Code Section 43018, which directs the Board to endeavor to achieve the maximum degree of emission reduction possible from vehicular and other mobile sources in order to accomplish the attainment of the state ambient air quality standards at the earliest practicable date, and directs the Board no later than January 1, 1992 to take whatever actions are necessary, cost effective, and technologically feasible in order to achieve, not later than December 31, 2000, a 15 percent reduction in the emissions of oxides of nitrogen from motor vehicles, and the maximum feasible reductions in particulates and toxic air contaminants from vehicular sources;

WHEREAS, Health and Safety Code Section 43018, effective January 1, 1989, also directs the Board to adopt a schedule in which workshops on the adoption of vehicular fuel specifications for aromatic content and diesel fuel quality shall be held not later than March 31, 1989, and hearings to adopt associated regulations shall be held not later than November 15, 1989;

WHEREAS, Health and Safety Code Section 43018(c), effective January 1, 1989, provides that in carrying out Section 43108 the Board shall adopt standards and regulations which will result in the most cost-effective combination of control measures on all classes of motor vehicles and motor vehicle fuel, including specification of vehicular fuel composition;

WHEREAS, the California Environmental Quality Act and Board regulations require that an action not be adopted as proposed where it will have significant adverse environmental impacts and alternatives or feasible mitigation measures to the proposed action are available which would substantially reduce or avoid such impacts;

WHEREAS, a public hearing and other administrative proceedings have been held in accordance with the provisions of Chapter 3.5 (commencing with Section 11340), Part 1, Division 3, Title 2 of the Government Code; and

WHEREAS, the Board finds that:

Emissions from diesel-powered motor vehicles contribute to ambient concentrations of ozone, sulfates, nitrogen dioxide, PM10, and visibility reducing particles;

The national and/or state ambient air quality standards for these pollutants are violated in California;

Emissions of oxides of nitrogen and sulfur dioxide from diesel-powered motor vehicles are projected to increase steadily in the future;



Emissions of particulate matter from diesel-powered motor vehicles are projected to decrease in the near term due to exhaust emission standards adopted by the Board, but will begin to increase after the beginning of the next century as growth in diesel-powered motor vehicle use begins to overcome the effects of the exhaust emission standards;

Reducing the sulfur content and aromatic hydrocarbon content of motor vehicle diesel fuel will reduce emissions of sulfur dioxide, oxides of nitrogen, and particulate matter from diesel-powered motor vehicles;

Diesel-powered motor vehicles emit a number of pollutants that have been identified as toxic air contaminants or are considered potential toxic compounds; the limits approved herein will reduce emissions of these pollutants and consequently reduce the potential cancer risk associated with motor vehicle diesel exhaust by approximately 10 to 17 percent;

It is technologically feasible for refiners to produce motor vehicle diesel fuel with a sulfur content of 500 ppm and an aromatic hydrocarbon content of 10 percent;

A separate, less stringent limit for the aromatic hydrocarbon content of motor vehicle diesel fuel produced by small refiners is appropriate in light of the greater economic impact of a 10 percent limit on small refiners and the greater difficulty they would have complying with the limit;

The modifications contained and described in Attachment D are necessary and appropriate to provide additional flexibility in meeting the requirements, tailor the regulatory requirements more closely to the present financial ability of the affected industry to comply, and clarify the intent of the provisions;

The cost-effectiveness ratios for reducing emissions from diesel-powered motor vehicles through the limits approved herein are within the range of other control measures adopted to reduce emissions of these pollutants;

The regulations approved herein fulfill requirements contained in the California Clean Air Act for control of diesel fuel, and are expected to be part of the most cost-effective combination of vehicular control measures adopted by the Board pursuant to Health and Safety Code Section 43018 effective January 1, 1989;

The emission reduction effect of reduced levels of sulfur and aromatic hydrocarbons in motor vehicle diesel fuel would occur immediately upon implementation of such reduced levels;

The economic impacts of the regulations approved herein are warranted in light of the public health benefits associated with the regulations;

The regulations approved herein are necessary and appropriate to attain and maintain the state and national ambient air quality standards identified above;

The additional processing and associated changes at refineries required to produce diesel fuel meeting the regulatory limits approved herein could result in significant adverse environmental impacts from increased emissions of sulfur dioxide and oxides of nitrogen at those facilities; the permit requirements of the air pollution control districts are expected substantially to mitigate such impacts; to the extent such impacts are not fully mitigated they would be outweighed by the greater reductions in sulfur dioxide and oxides of nitrogen emissions resulting from the approved regulations; the approved regulations will have no other significant adverse environmental impacts.

NOW, THEREFORE, BE IT RESOLVED that the Board hereby approves the adoption of Sections 2255 and 2256, Title 13, California Code of Regulations, as set forth in Attachments A and B hereto, and the amendment of Section 2252, Title 13, California Code of Regulations, as set forth in Attachment C hereto, with the modifications set forth or described in Attachment D hereto, and with additional modifications to: (i) postpone the implementation dates from January 1, 1993 to October 1, 1993, with corresponding modifications to other dates; (ii) refine the provisions on "mid-sized" refiners and small refiners' "exempt amount"; (iii) delete from the reasons stated in a variance application the requirement that they be "extraordinary"; and (iv) provide for consideration of aggregated emissions impacts in the evaluation of diesel fuel blends with alternative specifications.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to incorporate into Attachments A, B, and C the modifications approved by the Board herein, to conduct a workshop on such modifications, and either to adopt the regulatory actions in Attachments A, B, and C as modified after making them available to the public for a comment period of 15 days, with such minor modifications as may be desirable and necessary, or to present the regulations to the Board for final consideration and adoption, as he determines is most appropriate.

BE IT FURTHER RESOLVED that the Board directs the Executive Officer to report back to the Board in approximately one year on the status of implementation of the regulations approved herein, said report to include the following: (i) the results of any new tests comparing the emissions of heavy-duty diesel engines running on diesel fuel blends with varying characteristics; (ii) any additional information on the lubricity of diesel fuel having an aromatic hydrocarbon content of 10 percent; (iii) the status of a 10 percent aromatic content reference fuel and the test procedure for

comparing such fuel to diesel fuel with alternative specifications; (iv) recommendations on a possible requirement that any alternative specification diesel fuel produced by a small refiner must meet the same requirements applicable to other refiners; (v) recommendations on whether Section 2256 should be modified in the future to add provisions expressly pertaining to maintenance turnarounds; and (vi) ways of limiting emissions in California from heavy-duty vehicles fueled outside the state.

I hereby certify that the above is a true and correct copy of Resolution 88-59, as adopted by the Air Resources Board.

A handwritten signature in cursive script, appearing to read "Cary Allison", written over a horizontal line.

Cary Allison, Board Secretary

State of California  
AIR RESOURCES BOARD

Response to Significant Environmental Issues

Item: Public Hearing to Consider Adoption of Regulations Limiting the  
Sulfur Content and the Aromatic Content of Motor Vehicle Diesel Fuel

Agenda Item No.: 88-14-1

Public Hearing Date: November 17, 1988

Response Date: June 8, 1989

Issuing Authority: Air Resources Board

Comment: Several comments were received identifying significant environmental issues pertaining to this item. These comments are summarized and responded to in the Final Statement of Reasons, Section IV, which is incorporated herein by reference.

In Resolution 88-59, which is also incorporated herein by reference, the Air Resources Board found that the additional processing and associated changes at refineries required to produce diesel fuel meeting the regulatory limits in the new regulations could result in significant adverse environmental impacts from increased emissions of sulfur dioxide and oxides of nitrogen at those facilities; that the permit requirements of the air pollution control districts are expected substantially to mitigate such impacts; that to the extent such impacts are not fully mitigated they would be outweighed by the greater reductions in sulfur dioxide and oxides of nitrogen emissions resulting from the regulations; and that the regulations will have no other significant adverse environmental impacts.

Response: See above.

CERTIFIED: \_\_\_\_\_

  
Board Secretary

Date: \_\_\_\_\_

8/21/89

State of California  
AIR RESOURCES BOARD

Resolution 88-60

December 8, 1988

Agenda Item No.: 88-16-3

WHEREAS, Health and Safety Code Section 39003 directs the Air Resources Board (ARB or Board) to "systematically attack the serious problem caused by motor vehicles, which is the major source of air pollution in many areas of the state;"

WHEREAS, Health and Safety Code Section 39500 states that the Air Resources Board "shall have responsibility for...the control of emissions from motor vehicles and shall coordinate, encourage, and review the efforts of all levels of government as they affect air quality;"

WHEREAS, the Board finds:

- 1) Motor vehicles currently emit over 40% of all hydrocarbon, 60% of all nitrogen oxide, and 80% of all carbon monoxide emissions in California's urban areas;
- 2) The ARB's Long Range Motor Vehicle Control Program, which reduces vehicular emissions through more stringent new car and in-use programs and which promotes the use of cleaner burning fuels, will not control emissions from vehicles to the extent necessary to ensure attainment and maintenance of state or national air quality standards in all urban areas;
- 3) Traffic has grown five times as fast as freeway capacity and twice as fast as population over the last twenty years, and as a result vehicle activity and traffic congestion constitute a critical and ever growing problem for major urban areas;
- 4) Most vehicles on the road during periods of peak congestion contain only one person, and a significant increase in vehicle occupancy could result in both a significant decrease in congestion and a reduction in emissions; and
- 5) Growth in vehicle use and increases in traffic congestion will have a significant adverse effect on efforts to achieve and maintain state and national ambient air quality standards in urban areas;

WHEREAS, the California Department of Transportation (Caltrans) has projected that congestion will increase by 15 percent per year over the next ten years if current trends continue; and

WHEREAS, the California Clean Air Act of 1988 requires local air pollution control districts to adopt and enforce reasonably available transportation control measures and establishes transportation performance goals for vehicle occupancy and growth in vehicle emissions for areas that cannot attain state ambient air quality standards by 1997.

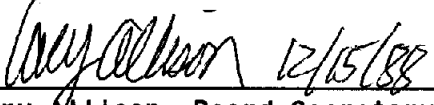
BE IT THEREFORE RESOLVED that the Board is committed to assisting state, regional, and local efforts to reduce emissions from motor vehicles by reducing the growth in vehicle useage and reducing dependence on the single occupant vehicle.

BE IT FURTHER RESOLVED that the Board directs staff to work with the districts, regional transportation planning agencies, county transportation commissions, and other involved local agencies to identify and promote implementation of reasonably available transportation control measures.

BE IT FURTHER RESOLVED that the Board directs staff to work cooperatively with the Business and Transportation Agency and Caltrans to expeditiously execute a Memorandum of Understanding (MOU) between this Board and Caltrans to define a common program for attacking traffic congestion and air pollution, and to ensure that the transportation-related provisions of the California Clean Air Act are successfully implemented.

BE IT FURTHER RESOLVED that the Board directs the staff to work with the California Transportation Commission, the California Energy Commission, and the Federal Highway Administration to support transportation-related decisions and actions that are consistent with clean air goals.

I hereby certify that the above  
is a true and correct copy of  
Resolution 88-60, as adopted by  
the Air Resources Board.

 12/15/88  
Cary Allison, Board Secretary

State of California  
AIR RESOURCES BOARD

Resolution 88-61

December 8, 1988

Agenda Item No.: 88-16-4

WHEREAS, Health and Safety Code Sections 39600 and 39605 authorize the Air Resources Board ("Board") to act as necessary to execute the powers and duties granted to and imposed upon the Board and to assist the local air pollution control and air quality management districts ("districts");

WHEREAS, the Legislature enacted Assembly Bill 2162 (Margolin) in 1987 (Stats. 1987, Ch. 491; Health and Safety Code Section 40709.5) which directs the Board and districts to form a Technical Review Group to prepare and submit a report to the Board by January 1, 1989, of its findings and recommendations for improvements in, and alternatives to, emission credit systems and emission offset requirements;

WHEREAS, Health and Safety Code Section 40709.5 further provides that the Board shall revise or adopt the Report of the Technical Review Group after a public hearing and then shall transmit the report to the Legislature and to the districts;

WHEREAS, the Technical Review Group has prepared a report entitled "Emission Credit Systems and New Source Review Programs" ("Report") which makes findings and recommendations concerning emission credit systems and emission offset requirements;

WHEREAS, in 1988, the Legislature enacted the California Clean Air Act (Stats. 1988, Ch. 1568;) which, among other requirements, provides that each district with moderate, serious or severe air pollution (as defined in Health and Safety Code Sections 40918-40920) shall have a New Source Review program designed to achieve specified goals;

WHEREAS, the original purpose of the Report was not to set goals for New Source Review programs; however, since the California Clean Air Act sets forth goals, it is now appropriate that the Report as approved by this Board be provided to the districts for use in amending New Source Review programs to achieve the California Clean Air Act goals; and

WHEREAS, the Board has held a duly noticed public hearing to consider approval of the Report and has heard and considered the comments presented by representatives of the Board, districts, and other interested persons and agencies.

NOW, THEREFORE, BE IT RESOLVED that the Board approves the Report proposed by the Technical Review Group and directs the Executive Officer to forward the Report to the Legislature and districts.

BE IT FURTHER RESOLVED that the Board recommends to the districts that the Report recommendations serve as a list of regulatory strategies and measures for nonattainment districts to choose from in revising their New Source Review programs to achieve the New Source Review program goals of the California Clean Air Act.

BE IT FURTHER RESOLVED, that the Board directs the Executive Officer, in the letter transmitting the Report and this Resolution to the Legislature, to indicate that, while the Report does not fully examine the benefits of economic incentives or recommend their use as an alternative to New Source Review programs, the Board believes that economic incentives are a potentially viable approach to encourage the further control of emissions if implemented properly and with the appropriate safeguards to ensure progress toward attainment and maintenance of the state and federal ambient air quality standards; the letter should also indicate that the Board will receive at its February 1989 meeting a comprehensive analysis from staff of economic incentives as a complement to traditional approaches to air pollution control.

I hereby certify that the above is a true and correct copy of Resolution 88-61, as adopted by the Air Resources Board.



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Cary Allison, Board Secretary